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Wisconsin Mills Expand Forestry Operations

Tree Culture Projects of Nekoosa-Edwards Paper Co. and Consolidated Water Power & Paper Co., Assume Tremendous Proportions—Further Operations Being Carried Out by Wisconsin Conservation Commission—Lookout Towers at Strategic Points—Work of the Institute of Paper Chemistry at Appleton, Wis.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 18, 1934—Because of their success with enormous tree raising projects, two Wisconsin mills can begin to look forward to the time when their wood sources will again be near at hand, and where they can obtain their entire yearly supply on permanent output basis. They are the Nekoosa-Edwards Paper Company, Port Edwards, Wis., and the Consolidated Water Power and Paper Co., Wisconsin Rapids, Wis.

Their tree culture operations have now assumed tremendous proportions, and the work is being expanded every year. The Nekoosa-Edwards company established its first tree nursery in 1927 on five acres owned by it on Nepco Lake. This nursery now supplies 2,000,000 trees a year, of which 1,750,000 are pine and 250,000 are spruce. The company also has another nursery on cutover lands in Sawyer and Ashland counties of Wisconsin, which produces another 2,000,000 trees a year. More spruce is grown there because of being better adapted to that climate.

Seedlings are transplanted after three years of growth, and the company now has 10,000 acres under cultivation in lands near the mill. Another 5,000 acres is owned by the company where natural reproduction is taking place. Some of the trees planted in 1928 have now reached a height of 16 to 17 feet. The work is in charge of F. G. Kilp, chief forester for the company.

Approximately 3,000,000 seedlings are grown at the Consolidated nursery each year under the direction of E. B. Hurst as chief forester. The company began its operations in April, 1931, on a five-acre nursery near its Biron mill. The major portion is spruce for its heavy production of fine papers, but about 125,000 seedlings each of jack, Norway and Scotch pine are put out each year for kraft wrappings. Some tracts are maintained near Wisconsin Rapids, but the majority of the transplants are being placed on cutover lands owned by the company further to the north. The company started with 9,000 acres but has added considerable land since.

Further operations of this kind are being carried on at a tract of nineteen acres near Nepco Lake by the Wisconsin Conservation commission. Last year the nursery produced five and a half million trees. The transplanting is being done on state and county owned lands in northern Wisconsin and the output this year is expected to be 6,000,000 trees. A nursery at Rhinelander, Wis., operated by the Federal Forestry Department for the benefit of the large Federal forests within the State produces approximately 25,000,000 seedlings annually.

Spruce requires about forty years to mature, but the pines are ready for cutting in twenty-five to thirty years. The supply in future years will be sufficient to keep the paper mills in their present location without fear of insufficient raw materials.

Lookout towers have been erected at strategic points, and the paper companies and the State maintain extensive fire fighting equipment so as to prevent any loss of trees from this source. Fire breaks and fire lanes are placed between tracts. A constant war also is waged on gophers, chipmunks and sparrows, which destroy the young trees.

Safety Conference Well Attended

The fourth annual Wisconsin Valley Safety Conference was held Friday of last week at Hotel Oneida, Rhinelander, Wis., with a large representation present from Wisconsin paper mills. A separate section was held for pulp and paper mill executives and workers, with W. J. Peacock, director of personnel and safety at the Northern Paper Mills, Green Bay, Wis., in charge. Speakers included: J. J. Plzak, director of safety for the Consolidated Water Power and Paper Company, Wisconsin Rapids Wis., subject, "Nip Hazards—Control and Elimination," and H. D. Banta, Hoberg Paper and Fibre Company, Green Bay, subject, "Electrical Hazards—Control and Elimination."

Work of Paper Chemistry Institute

Success of the Institute of Paper Chemistry is described in the annual report of Dr. Henry Merritt Wriston, president of Lawrence College, and director of the institute. He announced that only 23 students were accepted for the year just closing, but that the number will be increased this year. The report says in part:

"One of the reasons why the Institute was established was the excessive cost of training in mills, because 80 or 90 per cent of those seeking training did not remain in the industry. Sixty percent of those who come to the In-

(Continued on page 25)

Philadelphia Paper Market Displays Strength

Demand for Various Standard Grades of Paper Markedly Ahead of Last Month's Record—Volume of Sales Far In Excess of Most Sanguine Expectations—More Inquiries for Future Account Being Received Than for Some Time Past

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., June 18, 1934—Comparison of the present with the past month reveals the fact that wholesale and retail paper sales are markedly ahead, and this being the last lap of the second quarter of the year, compared with the same period last year, is far in excess of the most sanguine expectations. Printers are figuring on larger orders, and more inquiries have been received so far this month than for some time past, with inclination for purchasers to buy—all of which is regarded by the paper trade here as being indicative of increasing volume.

In the waste paper industry, there are restricted collections of the cheaper grades, under an agreement among the dealers in Philadelphia and New York, and this is regarded as a dominant factor in eventually raising the prices, possibly, within the next week or two. Members of the trade here put emphasis on the results attained by collectors in their refusal to collect waste paper, and expressed the belief that the supply situation now developing will surely lead to a more favorable price condition. Otherwise, the waste paper market was scarcely changed, either from a demand standpoint or as concerned quotable prices.

Association Activities

At the headquarters of the Paper Trade Association in the Drexel Building, there was received this week what is known as the "Green Book," which contains "Principles of cost finding and mark-up applicable to the wrapping paper division, developed under the uniform system of accounting and cost, and approved by the National Recovery Administration, April 14, 1934, for the paper distributing trade, and includes appendix of mark-up tables for every day use." This "Green Book" is specifically for the coarse paper trade, the fine paper trade being equipped with what is known as the "Blue Book."

During the week there was an overflow meeting of the Coarse Paper Division in the Drexel Building, at which the Commodity Committee chairmen presented their reports, and after elucidating and interesting talks, it was the consensus of opinion that the trend in the paper industry was on the up and up.

Questionnaires on tissues and gummed tapes were distributed among the trade with the request that open price schedule be filed with N. W. Walker, executive secretary of the Paper Trade Association in Philadelphia.

During the week, the regular monthly meeting of the Philadelphia Paper and Cordage Association, Inc., was held in the Crystal Room of the Adelphia Hotel, with George K. Hooper, president, presiding. A demonstrative welcome was given to Harold N. Newell, Philadelphia representative of the American Manufacturing Company, who having sufficiently recovered from a very severe automobile accident three months ago, was able to be in attendance at this meeting. The following, whose applications had been favorably passed upon by the committee on membership, Vincent A. Dirvin, of the Paper Manufacturers Company, Inc., chairman, were elected to membership: Wortendyke Manufacturing Company, Richmond, Va., manufacturers of bags, gummed tape and paper specialties, represented by Benjamin Z. Meisel; American Paper Goods Company, Conn., manufacturers of envelopes of all descriptions, glassine bags and glassine products, represented by E. C. Buckley; Krout and Fite Manufacturing Company, 1952 East Allegheny Avenue, Philadelphia, represented by Harry R. LeNoir, Jr. The membership now totals 66, and indications are that it will reach a goal of 75 when their outing takes place on Friday, June 22. An impromptu entertainment was furnished by R. J. Matthias, of the Matthias Paper Corporation, who performed on the musical saw, assisted by Raymond F. Armstrong, secretary of the F. W. Hoffman Company, Inc., who presided at the piano. Charles F. Koenig, of the Buffalo Envelope Company, led in the singing of hill billy and popular songs. This will be the last scheduled meeting for this association until September.

The remainder of the evening was given over to the discussion of plans and details for their annual outing to be held at the Manufacturers Country Club on the 22nd of this month. The program outlined is as follows: Golf tournaments, which will be in charge of Arthur Sherrill; a series of tennis matches, in charge of Willard Parkes; quoit pitching contests will be arranged by John Heverly. Everybody—members or guests—is invited to enter any of the contests and is eligible for a prize. The awards will be made after dinner, which will be served at 6:30.

News of the Trade

Morgan H. Thomas, president of Garrett-Buchanan Company, leaves this week with his family to spend the summer at Ocean City.

George W. Weaver, vice president, and Edward A. Keller, vice president and general manager, respectively, of Garrett-Buchanan Company, have leased cottages at the shore, where they with their families will hibernate for the summer months.

E. L. Richards, Philadelphia representative of the Buffalo Envelope Company, is spending a couple of weeks at the mill; he is expected to return the middle of this week.

O. K. Madsen, mill representative of Badger Paper Mills, Peshtigo, Wis., manufacturers of Ta-Nom-Ka Bond, for which the Hooper Paper and Twine Company is exclusive distributor, has been in the city on one of his periodical visits.

Kalamazoo Cost and Technical Golf

Arrangements have been made for a series of seven games, the first six of which will be qualifying rounds to determine flight placement for the seventh and final game.

Grand prizes are to be awarded for the tournament winners and other prizes will be awarded for each game.

Games are to be played at the Arcadia Brook Golf Course at 1:30 p.m. as follows: June 9 and 30; July 14 and 28; August 11 and 25; and September 8.

Registration for the games and tournament are being taken care of by the Golf Tournament Committee consisting of Norman Cowie and Harry Bradford.

Chicago Paper Market Conditions Unchanged

Various Standard Grades of Fine Paper Generally Holding Up Well—Book and Cover Papers Only Moderately Active—Sulphite Bond Quotations Adjusted With Little Difficulty—Newsprint and Ground Wood Papers Practically Marking Time

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., June 18, 1934.—Recent newspaper publicity relative to changes in the enforcement and provisions of the National Recovery Act has resulted in some hesitancy on the part of buyers despite speedy confirmation that the industry would continue to serve under the code provisions. This hesitancy, according to reports, had something to do with the comparative slowing up of business during the past ten days, but renewed convictions that the new changes will stand, are again aiding in steadying and increasing demand.

Locally, the market remained about the same as last week except for the situation as described above. The fine paper market held firm and previously reported adjustments in the sulphite bond market are reported to have been made by all concerned with little or no difficulty. The kraft market is firm, members of the coarse paper industry here reporting a much improved situation, due to rigid adherence to the open price filing association activity. The market is steady as to price quotations as well. Ground woods are said to be about the same, with continued uncertainty likely to remain until the newsprint situation is more definitely settled. Books and covers are about the same. The paper board market is moving along and exhibiting firmness as well as a lesser curtailment of demand during the early Summer than was expected. The waste paper market is about the same as reported a week ago.

Open Price Filing Working Well

A thorough discussion of the way in which the open price system is operating occupied most of the time of the regular meeting of the Chicago Paper Association, held at the Blackstone Hotel, Chicago, June 12. Reports indicate that the association is very much pleased with the way in which the open price situation is being handled, its fairness, thoroughness and the almost one hundred per cent backing given it by those participating. The only complaints registered so far, according to association executives, have been due to ignorance or errors of tabulation and have had nothing to do with dishonesty or "chiseling." This record, in a system where filings are checked down to the cents figure, is very encouraging to the association. William Chuckerman, vice-president of the retail section, presided at the June 12 session. During the week of June 18, either Wednesday or Thursday, a meeting will be held for a discussion of the filing of corrugated gum tape, rolls, sheets and retail items of a similar nature. A call has gone out for the immediate filing of these prices and the association feels that support similar to that given previous calls will be forthcoming from the coarse paper industry in Chicago.

Paper Board Code Hearings

Sidney Frohman, chairman of the Paperboard Code Authority, 608 South Dearborn street, Chicago, has sent out an announcement calling the attention of the industry to a meeting to be held at Washington, D. C., on Thursday, June 28, and to the NRA hearing to be held in Washington on the following day. Both the meeting and the hearing will be in addition to the proposed amended code for the paper board manufacturing industry. The meeting of the paper board industry will be to further consider the proposed amended code, a draft of which has been mailed to each member of the industry. The industry meeting on the 28th will be held at the Mayflower Hotel beginning at 10.00 a. m. The exact time of the hearing on the 29th has not as yet been announced. All members are strongly urged to attend both meetings to the end that they may participate in all deliberations and that the Code as finally presented may in so far as possible represent the views of the members of the industry as a whole.

News of the Trade

The Pioneer Paper Stock Company has leased for a term of years a three-story warehouse at 349 West Ontario street to take care of the rapidly expending business of that company, according to A. U. Claghorn, vice-president. The building is the one occupied until recently by the Pilcher-Hamilton-Daily Company, which recently moved back to its old building on the near north side. Pioneer's main plant is at 448 West Ohio street, only a block from the new addition.

Paper manufacturers will be interested in the announcement from the Link-Belt Company that a new 32-page illustrated catalog—No. 1415—with horsepower and other engineering data, dimension diagrams, etc., has recently been issued by that company. Copies may be obtained by requests made on business letterheads. The book covers single, double and triple reduction units of herringbone gear type and also a full line of flexible couplings.

The Chicago Tribune of Sunday, June 10, carried a photograph of William J. Miskella, representing the Paper Foundation, three Senators, two Representatives and Vice-President Garner, on the steps of the Capitol. The occasion was the presentation to Congress of the mile-long petition requesting reduction in postage rate to the old 2 cents figure by Mrs. Miskella in behalf of the Foundation. The petition, a feature of last year's paper exhibit at a Century of Progress Exposition, was signed by 119,186 persons and, following its examination by legislators, was sent back to the new exposition for further signatures. The petition was formally presented on June 8 to Senator Kenneth McKellar, of Tennessee, chairman of the Senate post office committee; Representative James H. Mead, of New York, chairman of the house post office committee, and Vice-President Garner. An S. D. Warren advertisement, printed on Warren's Cumberland Dull, White, and providing a splendid discussion of the increasing willingness of prospective buyers to spend, attracted attention in the Chicago market this week. The pamphlet suggests "that this is the time to put bulletins, booklets, catalogs and folders to work."

Pacific Coast Conditions Favorable

WATERTOWN, N. Y., June 18, 1934—Clarence E. Kinne, consulting engineer of the Bagley & Sewall Company, returned here this week following an extensive business trip to the Pacific Coast. The trip consumed several weeks during which he visited places from Los Angeles, Cal., to Bellingham, Wash. He declared that conditions looked very favorable and that everyone seemed encouraged. He found people in that vicinity very optimistic and it is his belief that the trend from now on will be upward.

Boston Paper Market Continues Listless

Demand for Various Standard Grades of Both Fine and Coarse Papers Rather Quiet—Kraft Wrapping Paper Only Moderately Active—Box Board Situation Practically Unchanged —Paper Stock Division Very Dull, With Quotations Nominal

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 18, 1934—Paper distributors of Boston and vicinity found a rather quiet market during the week, as a whole, in both fine and wrapping paper divisions. In many industries there is still more or less uncertainty in regard to values, but as soon as it is definitely known what prices are to be, catalogs will be published, so that printers will be calling for more paper. Some report a fair market in other lines of fine paper, with a few manufacturers who have local offices noting a good amount of operation at the mills. In wrapping paper, business was quiet to fair.

A bulletin was issued under date of June 13 by Frank B. Cummings, executive secretary of the New England, Central and Northern New York Regional Committee, as follows:

"To all members of the Paper Distributing Trade in the New England trading areas who have filed prices under the Price Reporting Plan, as per order of April 26, 1934:

"The Order of Administrator Hugh S. Johnson under Article VIII, Section 4(a) of the Code of Fair Competition for the Paper Distributing Trade requiring an addition of a definite percentage to market replacement cost to cover labor, will make necessary re-filing on any of the following forms where the price schedules now filed in any quantity brackets for warehouse delivery fall below the market replacement cost plus 9 per cent.

Form AW-1 Wrapping Tissue.
Form AW-2 Kraft Grocery Bags.
Form AW-3 Manila and Butchers' Fibre.
Form AW-4 Kraft Wrapping.
Form AW-5 Toilets and Towels.

"In examining the filed price schedules in this office, we find that for sales from warehouse stock the prices listed, particularly in the larger quantity brackets, would constitute a violation of the Code."

The box board market averaged quiet during the week, but values remained at the same levels.

The paper stock market remained dull, with prices unchanged throughout the lists. A representative of a local paper stock firm visited twenty-five mills during the week, obtaining little or no business.

News of the Trade

An advertising piece, one of the broadsides in the advertising campaign of the Oxford Paper Company, Rumford, Me., with offices at 230 Park avenue, New York, printed on Polar Superfine Coated Ivory, is being issued by Carter, Rice & Co. Corp. The broadside stresses the surface smoothness of this paper, calling attention to its sparkling appearance, strength, exceptional folding qualities and pleasing color. The photographs reproduced in this broadside, the engravings produced from those photographs and their line decorations, the type style and arrangement and the format have all been developed with the very definite idea of putting this sheet to its most severe test.

Jamie W. Stepp, manager of the printing paper department of the Brown Company, Portland, Me., which has a Boston office, has just returned to Portland from the West Coast. Mr. Stepp secured Blake, Moffitt & Towne, whose main office is in San Francisco, as distributors of the Brown Company's Nibroc line of papers and paper products. He expects to go back shortly, planning to hold a series of sales meetings at the various branches of Blake, Moffitt & Towne on the West Coast.

E. O. Benson, assistant treasurer of Stimpson & Co., Inc., was married Saturday to Miss Dagna Anderson, of Avon, Mass., in the Gethsemane Lutheran Church in that place. Mr. and Mrs. Benson have gone on a honeymoon trip and will reside in Avon on their return.

Arthur C. Hall, manager and treasurer of John Carter & Co., Inc., accompanied by Mrs. Hall and their grandchildren, has gone to Connecticut Lake, New Hampshire, until after July 4.

Henry Ford, manager of the fine paper specialty department of the Andrews Paper Company, has gone on a week's business trip to New York and nearby cities and New Jersey.

Charles Dodge, New England representative of D. M Bare Paper Company, Roaring Spring, Penn., makers of fine papers, visited the mill of that concern for a few days last week. Mr. Dodge was accompanied by Mrs. Dodge.

Indianapolis Demand Improves

INDIANAPOLIS, Ind., June 20, 1934—This month, following a preliminary dull season during some of May and early June, promises to recover for the paper trade some of its diminished volume. Orders in several lines have been fairly heavy, an increase over the week before and most of the month before. The local trade is fairly optimistic over the revised fair practice code for the industry.

The fine paper perhaps shows the least activity rebound. The ending of schools in all sections of the state and other conditions have combined to cause a decrease in fine paper demand. Some sales are being made, of course, but the local jobbers are expecting nothing really big until a trifle later in the summer. According to the local trade there is every prospect for a good fall business particularly in sales to printing trades who will produce a large expected volume of direct mail advertising. Several printers say there is considerable of this work being figured on and will develop later.

Conditions in the kraft division are excellent. Demand is good and the trade is looking for no price break during the summer. For a time during the last month there was a slight decrease in demand but during it there was no hint of lower price levels. Mill men seem to be well organized and production is being curtailed to a level where offerings can be assimilated. Thus far new lines are being held to a minimum and orders for established lines are not being booked far into the future.

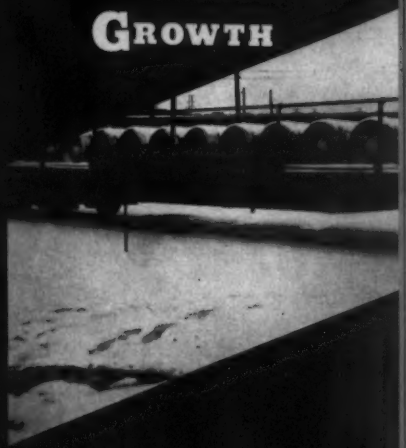
Newsprint is active also. The larger papers are using considerably more paper than they were this time last year and the summer slump, which is usual, seems not to have been noticed thus far this year. In fact the situation is improved to such a point that there is frequent talk of probable price increases.

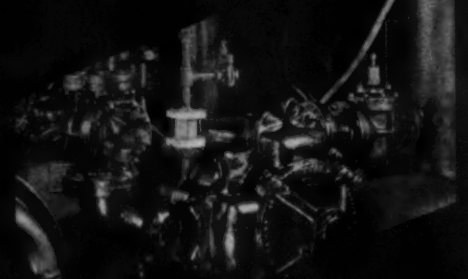
This year is showing a marked increase in sales of building papers as compared with the year before. However, the volume is not as large as it should be and cannot compare with that of before the depression.

GROWTH

BACKGROUND

ENTERPRISE





The true pioneer invariably achieves success—lasting fame . . . E B G, pioneer manufacturer of Liquid Chlorine, has achieved success through Enterprise, Background and Growth. Through specialization—Doing One Thing Well . . . This success is reflected in the fact that we have more customers today than ever. Customers who know that it pays to "look for the Red Cylinder".

ELECTRO BLEACHING GAS COMPANY

Main Office: 9 East 41st Street New York, N. Y.
Plant: Niagara Falls, New York

EBG Liquid Chlorine

FIRST IN THE COUNTRY

Canadian Paper Box Manufacturers Convene

Representatives From All Sections of Dominion, With Many From the United States, Attend Annual Meeting at Lucerne, Que.—F. W. Fisher, Head of Fisher Paper Co., of Toronto, Ont., Elected President of Association for Forthcoming Year

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., June 18, 1934—With representatives present from all parts of Canada and many from the United States the Canadian Paper Box Manufacturers' Association held its nineteenth annual convention at the Seignitory Club, Lucerne, Que., on June 11 and 12. The convention was the most largely attended and interesting the organization has yet experienced and was graced by many of the ladies of the members who were lavishly entertained during the business sessions. While the gathering was essentially one of paper box makers many of the allied trades were present and the big feature was the round table conference at which the paper box men sat in with representatives of the board mills and jobbers, ink and adhesive men and considered the problems peculiar to each department. An excellent spirit between the box mills and the supply men was manifest and during the course of the conference many difficulties were ironed out.

The annual address of the president, J. A. Northey, dealt with the condition of the industry during the past year, which had been more or less quiet, with diminished turnover, but one in which the turn of the tide had been witnessed. He believed that with the improved facilities for co-operation among the various branches of the paper box industry, prices, conditions of manufacture and the situation generally would from now on show gradual improvement and would soon be back to normal. There had been nothing in the past year to cause any great feeling of discouragement and he spoke hopefully of what was in store for the industry in the next twelve months. Mr. Northey relinquished the office of president and F. W. Fisher, head of the Fisher Paper Box Company, Toronto, was elected to preside over the affairs of the association for the ensuing year. L. Morrison, of the Automatic Paper Box Company, Toronto, was elected vice-president, and the new directors are W. Hemple, of the Hemple Paper Box Company, Brantford; T. A. Moisan, of Dominion Containers, Montreal; J. A. Northey, of the Telfer Paper Box Company, Toronto, and E. Reid, of Reid Bros., London, Ont. H. V. Hodder will direct the affairs of the organization from the general office in Toronto, as secretary.

Fricker Wins Golf Trophy

A feature of the entertainment program was the annual golf contest for the Fielder trophy, which was won by W. Fricker, of the N. B. Knowlton Company, Philadelphia, with W. Hemple, of Brantford, runner up. The Hinde & Dauch horseshoe contest, for which a silver cup was offered, was won by I. Good, of Kitchener, and J. A. Northey, of Toronto.

Some Papers and Addresses

The program included a number of excellent papers and addresses on various topics touching the problems of the box maker and the supply division. "Research and its effect on paper box manufacturing" was handled by E. E. Brooks, of the Dennison Manufacturing Company; while Lambel Elle, general superintendent of the New Jersey Machine Corporation, read a paper prepared by Marin Feybusch, who was unable to be present. H. H. Wolfenden, consulting economist, spoke on unemployed insurance, and the problems of board and adhesives were set forth by F. F. Arnoldie, of the Hinde & Dauch Company, of Canada, Ltd., and A. B. Meredith, of Meredith-Simmons Company, respectively. H. H. Hurd, of Sinclair & Valentine Company, of Canada, Ltd., dealt with ink problems. At one of the many luncheons the members listened to an address by Grattan O'Leary, editor of the *Ottawa Journal*.

Box Company Paying Up Arrears

The annual report of Canadian Wirebound Boxes, Ltd., which includes paper boxes in its activities, will be issued shortly and it is said that it will show increased earnings. The company has been busy not only with improved domestic general business, but has been working on orders from both Canadian and United States distilleries. The company has declared another payment on account of arrears on the Class A stock of 25 cents per share, payable June 30. Last March and again in January payments of 37½ cents on account of arrears were made, the one in January being the first since 25 cents per share was paid on November 1, 1932. The last payment leaves the company in arrears $2.37½ a share at July, 1934.

Code Authority Approved for Expanding and Specialty Paper Products Industry

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 20, 1934.—The National Recovery Administration announced through the office of Division Administrator George L. Berry, its recognition of the Code Authority for the expanding and specialty paper products industry, as follows:

A. C. Buttrick, Security Envelope Company, Minneapolis; J. W. Willmore, Cooke & Cobb Company, Brooklyn; B. Jospehson, Jospehson Manufacturing Company, New York; Nelson Bushnell, Alvah Bushnell, Alvah Bushnell Company, Philadelphia; and E. E. Bates, Quality Park Envelope Company, St. Paul.

The terms of office of the first two named expire January 1, 1935. The last three members of the Code Authority will serve until July 1, 1935.

Administration Member to Code Authorities

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 20, 1934.—The National Recovery Administration has announced through the office of Division Administrator George L. Berry, appointment of an Administration member to the Code Authorities of two industries, as follows:

Corrugated and Solid Fiber Shipping Container Industry—Shuford B. Marks, Chicago, vice president of the International Printing Pressmen and Assistants' Union of North America.

Wall Paper Manufacturing Industry—Isidor Etra, Corrugated Box Company, Maspeth, Long Island. Mr. Etra is on the directorate of a number of box concerns, and is member of the executive committee of the Container Ass'n of Greater New York.

Both of the above appointees will serve during the pleasure of the Administrator.

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[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 20, 1934.—The National Recovery Administration announced through the office of Division Administrator George L. Berry, its recognition of the Code Authority for the expanding and specialty paper products industry, as follows:

A. C. Buttrick, Security Envelope Company, Minneapolis; J. W. Willmore, Cooke & Cobb Company, Brooklyn; B. Jospehson, Jospehson Manufacturing Company, New York; Nelson Bushnell, Alvah Bushnell, Alvah Bushnell Company, Philadelphia; and E. E. Bates, Quality Park Envelope Company, St. Paul.

The terms of office of the first two named expire January 1, 1935. The last three members of the Code Authority will serve until July 1, 1935.

Administration Member to Code Authorities

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 20, 1934.—The National Recovery Administration has announced through the office of Division Administrator George L. Berry, appointment of an Administration member to the Code Authorities of two industries, as follows:

Corrugated and Solid Fiber Shipping Container Industry—Shuford B. Marks, Chicago, vice president of the International Printing Pressmen and Assistants' Union of North America.

Wall Paper Manufacturing Industry—Isidor Etra, Corrugated Box Company, Maspeth, Long Island. Mr. Etra is on the directorate of a number of box concerns, and is member of the executive committee of the Container Ass'n of Greater New York.

Both of the above appointees will serve during the pleasure of the Administrator.

Boston Paper Trade Holds Annual Outing

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 18, 1934—All roads led to the Charles River Country Club, Newton Centre, Mass., last Monday for approximately 100 members and guests of the Boston Paper Trade Association, who gathered there for the regular June meeting and annual outing of the organization. The weather was fair for all sports.

As usual, there were many golfers, in fact 64 entries, twelve more than in the previous history of the association. A good number took part in the other sports events. The starting time for golf was 8.30 to 2 o'clock and the field sports began at 2 o'clock, continuing through the afternoon. A buffet luncheon was served at the Locker Building from 11.30 on. Dinner was at 6.45 o'clock in the Club House.

Roger B. Taft Wins Trophy

A new champion, Roger B. Taft, appeared for the handsome silver Golf Championship Cup, offered by the Boston Paper Trade Association. This cup must be won three times to become the permanent property of the winner. Meanwhile it will remain in the custody of the winner of the best net score each year until the succeeding year's play and until such time as someone shall have won it three times. Previous winners of the cup are Charles A. Esty, William Stetson, Jr.; Asaph Churchill, John Munro, E. Lindsey Cummings, Edward Bement, William Stetson, Jr.; Norman Harrower, W. Edwin Porter, Jr.; John R. Whitney, W. H. Anders, and John Munro.

A feature of the field sports was the putting contest, in which T. Charles Casey finally won, after he had played around three times with Frank H. Merrill, on account of ties.

At the dinner, Col. Charles S. Proctor proposed a toast to President Frederic W. Main, "the Main guy in the Main circus," which was given with a will. President Main read a telegram from H. A. Moses, addressed to the Hon. John W. Vivian, M. G. C. P. (interpreted as "Most Great Club Putter"), expressed the hope that all would have a successful and happy outing. Mr. Moses was unable to attend as he was being honored by the Massachusetts State College with the degree of Doctor of Laws. A vote of thanks was extended to John W. Vivian for his hospitality in throwing the club open to the association.

After cigars were lighted, four new members were elected: Eugene O. Hanson, Brown Company, Portland, Me.; Clifford H. Harris, Fort Howard Paper Company, Green Bay, Wis., both proposed by T. Charles Casey; Edward J. Sullivan, Mohawk Paper Mills, Inc., Cohoes, N. Y., proposed by Col. Charles S. Proctor, and Kenneth L. Moses, St. Regis Paper Company, New York, proposed by W. Edwin Porter, Jr.

Prizes were then presented to winners at golf and the other sports. W. Edwin Porter, chairman of the golf committee, in awarding the Championship Cup to Roger B. Taft, in Class A-Handicap 20 and under, said that he had a score of 79 gross and 70 net. All prizes were of sterling silver, including table dishes. Other winners were as follows: First gross, John R. Whitney; second net, Edward B. Bement; both in Class A-Handicap. Class B Handicap, 21 to 28—First gross, Leon McGlathlin; first net, K. H. Ways; second net, William J. McLellan. Class C-Handicap, 28 and over, best selected nine holes, Joseph A. Moses. Guests' Handicap Tournament, E. H. Sussenguth. Kicker's Handicap, W. H. Anders.

Sports Prizes Awarded

Earl S. Clark, chairman of the sports committee, awarded the prizes in these events, as follows: Horseshoes, Frank B. Cummings and John L. Hobson, zipper document cases; bowling, Royal P. Teele, pen and pencil set; throwing contest, H. C. Thayer, pen and pencil set; putting contest, T. Charles Casey, pewter vegetable dish; guessing nearest to the correct number of sheets of paper in a pile, Gardner W. Very, a first aid restorer. The baseball game was won by a team captained by Gardner W. Very against one led by T. Charles Casey, by a score of 7 to 1, in a three-inning contest. Prizes to the winners were packages of cigarettes, given out on the field.

Winthrop L. Carter Speaks

President Main welcomed Winthrop L. Carter, who had recently returned from a trip to South America. Mr. Carter gave a very interesting talk, noting some of his experiences in that country, including airplane trips. He mentioned speaking before the American Club in Santiago, Chile, and how eager all were to know about conditions in the United States, about the NRA and what it had done in this country. They asked him so many questions that he talked there for an hour and a half. All they receive in South America are radiograms on the proceedings of Congress. There were as loyal a group of Americans in the American Club as he had ever met. He went to a government agricultural experiment station in Brazil, in charge of a man from Illinois. He noted the poor quality of paper used for the newspapers in Chile, but said that imports of paper into the country had been cut off by an embargo. Mr. Carter paid a tribute to the Pan-American Airways, which is "fundamental to the economic life of South America." In closing, he mentioned that we are working out our problems in the United States and don't see the end. "I fear that not enough of us are looking beyond our borders. We will only solve our problems when we realize our inter-relationships and we cannot build up anything by the NRA unless we can meet the inter-relationships with other countries."

The day ended with the singing of America, led by E. Lindsey Cummings.

The committees were as follows: Sports—Earl S. Clark, Charles J. Brown, William H. Loud, Royal P. Teele, Gardner W. Very, Hubert W. Lockhart. Golf—W. Edwin Porter, Jr.; E. D. Bement, J. G. Swift, W. J. McLellan, John Munro.

Officers of the Association are: Frederic W. Main, president; F. Bendel Tracy, first vice-president; Walter J. Raybold, second vice-president; T. Charles Casey, treasurer, J. L. Hobson, secretary.

The Attendance

Those present included: F. W. Main, E. S. Clark, F. Bendel Tracy, W. J. Raybold, W. E. Porter, Jr.; J. L. Hobson, Ernest S. Reid, Royal P. Teele, Wm. C. Ross, C. Frederic Wellington, W. L. Carter, Joseph D. Snell, J. E. A. Hussey, Charles S. Proctor, Charles A. Shaw, W. Gardner Very, Harold C. Upham, H. C. Thayer, Harold A. Allen, W. S. Smock, John E. Roach, E. P. Hay, Arthur M. Burr, Donald R. Smith, Emory M. Wright, J. W. Vivian, L. E. Maglathin, E. O. Hanson, Graham Blandy, 2d; E. D. Bement, Albert R. Smith, Wallace B. Marston, Fred T. Burkhardt, W. J. McClellan, R. H. Campbell, Jos. A. Moses, Norman Harrower, George W. Wheelwright, James B. Ramage, Thomas L. Stirling, Walter B. Sheehan, Everett F. Howarth, W. H. Hilton, C. W. Fields, W. W. Langtey, J. R. Whitney, E. T. Simpson, Hubert W. Lockhart, D. K. Brown, A. S. Ericsson, K. L. Moses,

(Continued on page 49)

Suggested Pension Plans Suitable to the Needs of the Papermaking Industry

By G. Chauncey Parsons, Insurance Counsellor

Of approximately 48,000,000 wage earners in this country, there are about 4,000,000 covered by present pension plans. However, from all available data, funds necessary to meet not only those now drawing pension benefits but those to be pensioned in the future under present plans, amount to only about one-quarter of that actually required and the deficit is increasing yearly. Obviously something must be done to correct this situation on our old plans. And in the development of new plans proper actuarial advice should be obtained so as to avoid pitfalls later on.

Early Pension Plans

Pension plans originally started as mutual welfare organizations to take care of incapacitated and aged employees. As time went on the field was gradually broadened out in an attempt to retire superannuated employees.

However practically all these early plans were established without actuarial advice and usually operated by the company management. Most of the early plans were non-contributory, i.e. employees bore no share in the cost, and were full of discretionary provisions chiefly in favor of the company which led to a great many abuses. Service requirements usually called for 25 years or more of continuous employment and were too rigid. In a large majority of cases the employees knew nothing of the technical workings of the plan nor of the benefits really due them.

A great many of these old plans have either been abrogated in whole or in part. In some cases those actually retired and on pension have been deprived of their pension due to the unsound conditions under which the plans were founded.

Experience in Types of Plans

Experience has shown that except in the very large industries such as railroad and some public utilities, it is impractical to use the self-administered plan because unless we have units of more than 10,000 people, we cannot use mortality table averages and the only way in which smaller organizations can get the benefit of averages is through insured plans. Further by using an insured plan, the plan becomes a charge against current earnings and the cost is met with current profits. Therefore, we are not passing on a charge or liability to future management which may or may not be willing to meet it.

Under an insured plan, backed by the entire assets of a life insurance company, the pension bought for the employees is funded and paid for currently. Should there be a merger, liquidation or change in management the amount of pension purchased to date is set aside for the employee. Any employee who has previously been pensioned under this plan is assured of his pension as it cannot be taken away from him.

In using an insured plan, we avoid becoming involved in a business of which we know nothing. Business generally is speculative. Speculation has certain hazards, also profits, and the management of any business should be free to give its entire time to the company's business and not to the insurance business.

There has been a great deal of agitation on unemployment and old age insurance, resulting in many bills being introduced in legislatures for state or government control. In view of President Roosevelt's recent message to Congress, it is only a question of time now when the Federal Government will enact a law making pension plans obligatory to all industry.

Industry today, therefore, has two alternatives: First, installing pension plans now and designed to fit the specific needs of its own employees so that adequate pensions will be provided on a sound actuarial basis, and for a price they can afford to pay; or, second, procrastinate until the government imposes on them a general pension plan applicable to all industry. If this is done the cost will be materially higher, industry will get no credit for the move and the general plan may not fit the particular industry at all.

Social Benefits

If in times past we had set up well administered pension plans in our various industries for the benefit of a great majority of our industrial employees, many acute community problems which we are now facing, such as support of the aged, would be eliminated. Purchasing power would be much greater today and we would not be called upon to pay for old age relief through taxation and contributions.

Underlying Principles of a Pension Plan

The first underlying principle of a good pension plan is its foundation. We must have absolute safety for as far ahead as we can see and I believe that the past and present record of our life insurance companies, writing pension plans, entitle them to our full confidence.

A sound pension plan should be funded, that is, adequate funds should be set aside and paid over to the insurance company in the form of premiums each month or year to meet the current costs of the pension plan. By purchasing pensions in this way the amount necessary to buy the ultimate pension is less, also it is a charge against current earnings, while the ultimate pensioner is actively producing, and not passed on as a charge against future earnings and an obligation for future management.

The employee should share in the cost of his pension. Only by doing this will he fully realize what the benefits will mean to him. In many cases his participation in the pension plan has been a condition of employment. Monthly pension income, beginning at normal retirement age, should provide more than the bare necessities and should be enough to somewhat approximate his present standard of living. A properly designed pension will do this.

Details of a Pension Plan

The cost to employer and employee should be approximately the same and will amount to about 3 per cent of payroll up, depending on the age groups, also the percentage of females in the company's employ. Actually due to the increased efficiency usually shown the cost to the employer is negligible.

RETIREMENT AGE: We should have fixed normal retirement age, usually 65 for males and 60 for females. However provision is always made for optional retire-

ment under certain conditions before normal retirement age is reached.

AMOUNTS OF PENSION: For service subsequent to the installation of the plan, the amount is usually 1½ per cent of salary times the number of years of service. Under certain conditions this is low. It might be necessary to increase it to 2 or 2½ per cent. Credit is usually given to the old employees in the form of prior service credit. For service prior to installation of plan, the pension amount is usually fixed at 1 per cent of present salary times years of service.

EMPLOYEE'S CONTRIBUTIONS: This will be a certain percentage of his salary from 3 per cent upward, depending upon his age at the time of installing the plan or his entry into the company's employ. His contribution will have the insurance company's guarantee of safe-keeping and will earn interest. Should he leave the company's employ he has the privilege of taking his accumulated funds with him or he can leave that fund with the insurance company in the form of a paid-up annuity beginning at or before normal retirement age. He would also have the privilege of continuing his own contributions for his own benefit.

EMPLOYER'S CONTRIBUTION: This must, of course, make up the deficiency between that paid by the employee and the amount necessary to purchase a pension. It should be approximately in a like amount to that of the employee. Ordinarily the employee's contribution is calculated with the mortality factor. The contribution for past service is usually in the form of a single premium. However, it can be amortized over a reasonable period of years. When an employee leaves, under certain conditions, the employer's contribution is returned with interest either in cash or as a credit against future premiums.

PROBATIONARY PERIOD: The plan should have a probationary period, the length of which can only be determined by analysis of specific employer's conditions.

LAY-OFF PRIVILEGES: The provisions should be made covering necessary layoffs.

PROTECTION PROVISIONS: The plan should have certain legal safeguards from both the employers and employees point of view.

CERTIFICATES: A certificate should be issued to each employee explaining the plan in full detail and giving illustrations of its operation.

OPTIONAL ANNUITY PRIVILEGES: To best serve the employee's needs at the time of retirement, certain optional forms of annuities should be available, subject to contract restrictions.

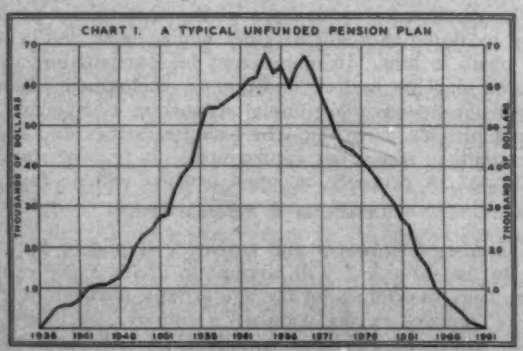


CHART 1—A TYPICAL UNFOUNDED PENSION PLAN

This chart shows the annual charge against the payrolls, on the assumption that, after the plan is put into effect, there are no wage increases, and no new employees hired. Based on American Experience Table of Mortality and 3½ per cent interest.

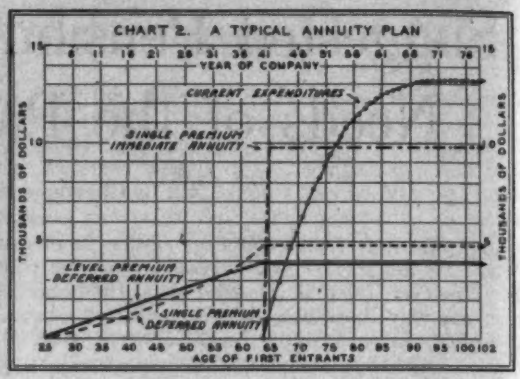


CHART 2—A TYPICAL ANNUITY PLAN

This chart shows annual charges to operating expenses under four methods of cost accounting, for an annual pension of $1 to each of a group of 1,000 entering employment and surviving to age 65 (combined annuity mortality, 4 per cent interest). Reprinted by permission from "Industrial Pension Systems in the United States and Canada," by Murray Webb Latimer. Copyright, 1933, by Industrial Relations Counselors, Inc. (Reprinted by permission)

Method of Financing Pension Plans

Having determined that a pension plan is a good thing for our industries, let us look into the problem of financing it.

Chart 1 illustrates the operation of a self-administered plan and projects into the future the charge necessary against payroll to provide pensions to the company's present employees. The payroll of this company is $186,000 a year. If the employees are pensioned off, the payroll cost will go down while the pension cost each year will increase. Further the number of employees will be reduced each year so that in 1972 we will have no employees at all. They will all be retired on pension but we must still continue to pay them their pension until 1991, a period of 19 years. Obviously this method is not sound and this plan has now been insured and is adequately funded and the evils of the old plan corrected.

Chart 2 illustrates four methods of cost accounting or methods of purchasing pensions, from which it is quite obvious that an annual or monthly premium beginning with the inception of the plan is the economic answer to the problem. In the past a great many pension plans have been installed wherein the single premium immediate annuity was used without the proper realization of the ultimate cost. In some cases the plan has been continued but in a great majority of cases, it has resulted in modification or abrogation of all accrued benefits.

The Economic Value of Pension Plans

From the point of view of the employee, his two greatest worries are: "Will I have a job?" and "Will I have any income when I can no longer work?"

Industry will have to work out the first problem as there is no actuarial basis on which it can be calculated. However the Federal Government is also working on this problem. From the pension angle, if the employee has been and still is actively producing, we can and must assure him of adequate provision in his old age and he should assist in the creation of this fund. This fund must never be subject to the hazards nor whims of management, nor withdrawal by the employee himself as long as he is employed. The basic idea is to provide for his old age and nothing else. An employee that knows he will have an independent old age is a better employee, a more loyal employee and a much more efficient employee, and

strike agitation is going to fall on more or less deaf ears. Nor will he be as subject to our competitors' bait.

There is another factor from the economic point of view and that is accident hazard. In later years, we find the accident hazard greater among the older groups of employees. With the automatic elimination of these employees under the pension plan, this hazard is decreased, resulting in lower compensation costs.

It has always been good business and good accounting to set up adequate reserves against depreciation, buildings, equipment, machinery and stock of goods on hand. Therefore why should we not set up adequate reserves against depreciation of our man power. If we do not do this, we leave the problem of old age relief to our municipalities or charitable organizations and it comes right back to us in the form of increased taxation with a certain amount added to meet political costs. Further, it must be remembered that the entire burden falls on industry—no part being paid for by the employee himself.

EXPAND FORESTRY OPERATIONS

(Continued from page 15)

stitute go into the paper industry. That is adequate justification of the hopes of the founders.

"When the paper code, under the National Recovery Act, was put into effect there was need for a scientifically controlled testing program to assist in the classification of paper. The Institute was given the opportunity to prove its usefulness in a manner and to a degree quite unforeseen. The paper industry was the only major industry with such facilities at its disposal.

"Recently the character and size of the problems referred to the Institute have developed remarkably. In consequence, the total number of persons employed at the Institute rose to forty-three. A full-time microscopist and wood fiber expert has been added to the staff, as well as a physicist and several chemists. There are now nine full-time members of the staff with the doctor of philosophy degree.

"Beside its problem of education and research, the Institute was to supply a library for the industry. Very generous gifts made it possible to assemble a splendid library in this field. During this year more gifts have made possible further large additions to the collection, particularly through filling gaps in important files of publications.

"A year ago at this time, the banking position of the Institute was very difficult. It was necessary to finance, in part, the original building, and some of the members did not meet their contract payments on time. This year cash income is exceeding expenditure by from seven to ten thousand dollars; generous gifts and the addition of new members have greatly relieved the drain."

At a recent meeting of the trustees, two titular changes were made in the staff of the Institute of Paper Chemistry. Dr. Harry F. Lewis, formerly Neenah student, has been given the title of dean. This will incur no responsibility or duties beyond those already performed by Dr. Lewis, but is an academic recognition of functions that have been his in the past. Dean Lewis continues to have charge of student and academic activities of the Institute. Dr. B. L. Browning, formerly research assistant, has been appointed research associate. Dr. Browning joined the Institute staff in 1932. He received his BS and MS degree at the Missouri School of Mines and his PHD at the University of Wisconsin. In addition to his research work, Dr. Browning has a class in chemical analysis. No other changes in personnel were announced.

Five who were graduated from the Institute with the M. S. degrees in recent years were granted the degree of doctor of philosophy at the Lawrence College commencement this month. They are: Richard C. Crain, now employed by the Whiting-Ployer Paper Company, Stevens Point, Wis., thesis, "A study of bleaching of rag half stock by calcium hypochlorite solution"; Martin L. Down, Mead Corporation, Chillicothe, Ohio, thesis, "An analytical study of various pulps with reference to alkali binding and rosin sizing"; Walter F. Holzer, Crown-Willamette Paper Company, Camas, Wash., thesis, "A study of the coloring matter in pine kraft pulps"; Henry E. Obermanns, Hammermill Paper Company, Erie, Pa., thesis, "A study of the effect of hemicelluloses on the beating and strength of pulps," and Sam J. Robinson, Champion Fiber Company, Canton, N. C., thesis, "The system of rosin size, alum, and fiber as related to problems in paper sizing."

Court Sustains Nepco Appeal

When it was forced to shut down one machine and was on the verge of shutting down another because of the lack of marl required for certain types of paper, furnished in water from Nepco Lake, the Nekoosa-Edwards Paper Company, Port Edwards, Wis., appealed to the court and obtained relief. Action was brought to compel farmers to remove sand dams hastily constructed to prevent the natural flow of water through Buena Vista and Duck creeks into Nepco lake. The dams were built to flood lands parched by drought so as to provide pasturage for cattle. This action shut off the flow of marl ordinarily supplied to the lake. Judge Byron B. Park ordered the farmers to remove the dams.

The outcome of the situation probably will be a move to build permanent dams on these streams in order to back up the water into the farm areas when needed.

Kimberly-Clark Officials Sued

Trial of the suit brought by Mrs. Lois Thom Nichol, of Atlanta, Ga., against F. J. Sensenbrenner, president of the Kimberly-Clark Corporation, Neenah, Wis., and J. C. Kimberly, also of the same firm, was in progress most of last week at Oshkosh, Wis. Mrs. Nichol is suing for the recovery of $20,000, representing the difference between the value of Kimberly-Clark stock she sold to the company at $250, and $450 per share, the amount she claims the stock was worth at the time of the negotiations in 1926. Judge Fred Beglinger, of the circuit court, is hearing the case.

The plaintiff is attempting to bring out through her attorneys the allegation that substantial blocks of profit from the Kimberly-Clark Corporation were diverted to subsidiary companies to the disadvantage of owners of Kimberly-Clark stock.

During an adverse examination, Mr. Sensenbrenner stated that an offer of $15,000,000 for the Kotex company, one of the subsidiaries, was not meant seriously, in his opinion. Evidence showed, however, that other business interests had been interested in purchasing a share in this company at a high figure about the same time the stock was purchased from Mrs. Nichol.

Mrs. Nichol, who is a daughter of the late Peter R. Thom, general superintendent of the Kimberly-Clark Corporation up to the time of his death, inherited the stock in question. She admitted she did not know the value of the stock when she sold it in 1926 for $250 a share. Testimony revealed, however, that Edgar Thom, a brother who brought suit for $140,000 against the same defendants, had examined the books of the company, but it is alleged that information he obtained did not inform him of the true state of affairs. Testimony also brought out that Mrs. Nichol's sale of 100 shares was a "feeler" and that she still owns 1,100 shares.

During an adverse examination, J. C. Kimberly declared

he had no interest in the transaction and received none of the stock purchased.

News of the Industry

The Northern Paper Mills, Green Bay, Wis., closed down Saturday, June 16, for the annual picnic of its 1,500 employees. A parade was held in the morning to the park. The employees had a business meeting, and the remainder of the day was devoted to amusements.

The annual picnic of the Ashland mill of the Marathon Paper Company was held Sunday, June 17, at Prentice Park, with 430 employees and their families enjoying an entire day of recreation.

J. K. Vanatta, of the Nekoosa-Edwards Paper Company, spoke before the Rotary Club of Wisconsin Rapids, Wis., last week, explaining the code for the paper industry. He declared the matter of price maintance and preservation of contract agreements were the most difficult parts of the codes.

J. N. Bergstrom, president of the Bergstrom Paper Company, Neenah, Wis., was elected first vice-president of the board of trustees of Lawrence College, Appleton, Wis., at the annual meeting last week. He succeeds Charles S. Boyd, president of the Appleton Coated Paper Company. C. B. Clark, president of the Riverside Paper Corporation, Appleton, and D. C. Everest, vice-president of the Marathon Paper Mills Company, Rothschild, Wis., were re-elected to the board.

S. F. Shattuck, vice-president of Kimberly-Clark Corporation, Neenah, Wis., has been appointed on the committee administering Federal unemployment relief at Neenah.

J. L. Barchard, president of Hummel & Downing, Milwaukee, is serving on the executive committee of the NRA bureau of public relations of Milwaukee county.

Announcement is made of the death of Mrs. A. F. Tuttle, wife of the president of Tuttle Press, paper converting manufacturers, Appleton, Wis. She passed away suddenly last week following a heart attack.

Tax on Large Size Bags Is Abated

WASHINGTON, D. C., June 20, 1934.—Secretary of Agriculture Henry A. Wallace has signed a certification and the necessary proclamations which will abate the processing tax on large sized cotton bags, terminate the compensating tax on jute fabric used in the manufacture of large jute bags and terminate the compensating tax on paper used in the manufacture of large paper bags.

In addition the compensating rate of tax on paper used in the manufacture of paper towels was reduced and the compensating tax on paper fabric used in the manufacture of open mesh paper bags was adjusted by a modification in their definition.

The initial finding by the Secretary of Agriculture was included in a certification under section 15 (a) of the Agricultural Adjustment Act in which he found that large cotton bags, that is cotton bags having a cut area of 950 square inches or over and a weight basis of 380 pounds or over or a cut area of 1,475 square inches or over and a weight basis of 170 pounds or over, or intermediate bags provided that for each pound of decrease in the basis weight from 380 pounds per thousand bags, the cut area per bag is at least 2½ square inches greater than 950 square inches, were of such low value, considering the quantity used in their manufacture, that the payment of the processing tax on cotton is causing, in large part, a decrease in the use of such cotton bags and a further accumulation of surplus stocks of cotton. Hereafter, according to the certification, the processing tax on cotton going into the manufacture of such cotton bags is to be abated or refunded.

Simultaneously a proclamation was signed by the Secretary which terminates the compensating rate of tax on large jute bags and lowers the rate on jute fabric going into small jute bags from 2.9 cents per pound to 2.1 cents per pound. The regulations which will abate the tax on large jute bags defines these bags in substance as bags having a cut area of less than 950 square inches or a basis weight of less than 393 pounds of jute content per thousand bags or jute bags having a basis weight greater than 393 pounds per thousand bags but less than 872 pounds per thousand bags, provided that for each pound decrease from 871 pounds per thousand bags, the cut area per bag is not more than 1.08 square inches greater than 950 square inches.

The adjustment of the compensating rate of taxes on paper bags involves the abatement or refund of the tax on bags with a capacity of 75 pounds or over. The adjusted rates on paper bags having a sacking capacity of 4½ pounds and over and less than 75 pounds, printed, labelled or otherwise identified as bags designed and in form for use in the packaging of grain flours, corn meal, sugar, salt, fertilizers, feed or potatoes is as follows:

4½	to	5.4	lb. size—	$1.24 per M
5½	to	7.9	lb. size—	1.47 per M
8	to	10.9	lb. size—	2.02 per M
11	to	12.9	lb. size—	2.25 per M
13	to	16.9	lb. size—	3.11 per M
17	to	29.9	lb. size—	3.96 per M
30	to	74.9	lb. size—	7.91 per M

The rate of tax on paper fabric going into open mesh paper bags was left unchanged, but is limited to bags having a cut area of less than 950 square inches per bag or having a basis weight of less than 369 pounds of paper content per thousand bags and having a basis weight greater than 369 pounds per thousand bags but less than 825 pounds paper content per thousand bags, provided that for each pound decrease from 825 pounds the cut area per bag is not more than 1.15 square inches greater than 950 square inches.

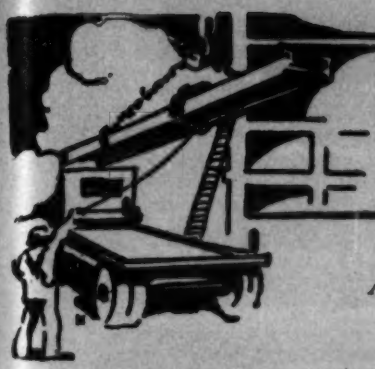
The rate of tax on paper used in the processing of paper towels was reduced from .715 to .346 per pound weight of paper.

Awards for Government Paper

WASHINGTON, D. C., June 20, 1934—The Government Printing Office has announced the following paper awards.

The R. P. Andrews Paper Company has been awarded the contract for furnishing the Printing Office with 36,000 lbs. (150,000 sheets) of 28 x 40, white sulphite writing paper at 6.54 cents per pound and the Mathers-Lamm Paper Company will furnish 13,520 pounds (77,705 sheets) of 29 x 40, litho finish map paper at 13.96 cents per pound. Bids for these items were received on June 6.

The following awards were made for paper, bids for which were received on June 1. Dobler & Mudge will furnish 36,000 pounds (107,000 sheets) of 21 x 32, white sulphite manifold paper at 8.61 cents per pound. Barton, Duer & Koch Paper Company will furnish 240 pounds (3,000 sheets) of 10½ x 29 inches deckle edge buff antique cover paper at 17.94 cents per pound. The Old Dominion Paper Company will furnish 2,500 pounds (25,000 sheets) of 28 x 34, 50 per cent rag yellow bond paper at 15.03 cents per pound and the Aetna Paper Company will furnish 133,750 pounds (1,500,000 sheets) of various sizes 25 per cent rag mimeograph paper at 10.81 cents per pound.



CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Philadelphia, Pa.—The Container Corporation of America, Inc., Fountain and Nixon streets, manufacturer of corrugated and other paper boxes and containers, has awarded general contract to Schaefer & Co., Insurance Company of North America Building, for new addition to plant, to be used primarily for storage and distributing service. New unit will cost over $75,000, with equipment. Superstructure will be placed under way at early date. Company is also planning extensions and improvements in power plant at local factory, for which the H. M. Wilson Company, Eighteenth and Brandywine streets, is consulting engineer. Company headquarters are at 111 West Washington street, Chicago, Ill.

Milford, Conn.—The New England Container Company, manufacturer of paper boxes and containers, etc., has arranged for increase in capital from $75,000 to $100,000, for general expansion.

West Linn, Ore.—The Crown Willamette Paper Company, 343 Sansome street, San Francisco, Cal., has let contract to the Hoffman Construction Company, 715 S. W. Columbia street, Portland, Ore., for installation of a new water filtration plant at mill at West Linn, including tanks, basins, filters, pumping machinery and auxiliary equipment. It is expected to begin work at early date.

Brooklyn, N. Y.—L. Glickman & Co., 505 Johnson avenue, manufacturer of paper bags and containers, has filed plans for new addition to two-story plant unit, to be used primarily for expansion in storage and distributing department. Cost about $25,000, with equipment. Work will be placed under way at once. J. M. Falson is company architect.

New York, N. Y.—The Ajax Envelope Company, Inc., has been chartered under state laws with capital of 200 shares of stock, no par value, to manufacture and deal in envelopes and kindred paper specialties, and will take over and succeed to the organization of same name at 474-76 West Broadway. Incorporators of new company include Charles M. and George B. Kolb, and Peter Battilo, all located at address noted.

Philadelphia, Pa.—The Autokraft Box Corporation, Water and Porter streets, manufacturer of paper boxes and containers, has leased space in sections A and B of the local Fretz Building, 1001-15 Diamond street, totaling about 20,000 square feet floor space, and will occupy for new plant, expanding present facilities and capacity.

Cloquet, Minn.—The Berst-Forster-Dixfield Company, Plattsburg, N. Y., manufacturer of pulp products, wood specialties, etc., has awarded general contract to the James Leck Company, 211 South Eleventh street, Minneapolis, Minn., for new addition to branch plant at Cloquet, recently referred to in these columns. It will be two-story and basement, reported to cost about $150,000, with equipment. Superstructure will be placed under way at early date. Homan F. Hallock, Oswego, N. Y., is architect and engineer. N. G. Begle is president.

Chicago, Ill.—The Celotex Company, 919 North Michigan avenue, manufacturer of wallboard products, insulating board, etc., is arranging plans for company reorganization, including new stock issue for operations. Main mill is located at Marrero, near New Orleans, La.

New York, N. Y.—The Comet Envelope and Printing Company, Inc., 31 East Seventeenth street, manufacturer of envelopes and other commercial paper products, has arranged for change in company name to the Comet Envelope & Paper Company, Inc.

Bridgeport, Conn.—The George S. Knapp Company has been organized with capital of $50,000, to operate a plant at Bridgeport or vicinity for the manufacture of paperboard specialties. New company is headed by George S. Knapp, Bridgeport, and Otto F. Carlson, Milford, Conn.

Portland, Ore.—The Western Wax Paper Company, Packers avenue, North Portland, manufacturer of waxed and other processed papers, has closed bids on general contract for proposed new addition to local plant, recently referred to in these columns, and will soon place award. Superstructure will be placed under way at early date. New structure will be one story, 100x150 feet, estimated to cost close to $30,000, with equipment. Plant capacity will be increased. E. C. Bogren is general manager.

Johnson City, N. Y.—The Felters Company, 210 South street, Boston, Mass., manufacturer of papermakers' felts, etc., has awarded general contract to the Crane Service, Inc., 21 Glenwood avenue, Binghamton, N. Y., for new addition to branch mill at Johnson City, near Binghamton, and will proceed with work at once. New unit is reported to cost over $85,000, including equipment.

Escanaba, Mich.—The Escanaba Paper Company is giving employment to about 225 men on regular production schedule, with an additional force of approximately 70 men during high water operations. The plant is running on a three and four-shift day basis. The company has recently expanded operations for the production of wood pulp under favorable water conditions in the Escanaba River, and has been giving employment to the extra working force noted largely for this purpose. It is expected to hold to present production basis for an indefinite period.

International Falls, Minn.—The Minnesota and Ontario Paper Company is arranging plans for reorganization under the recently enacted Federal corporate bankruptcy legislation. The company has been in receivership for some time past. The application for authority to carry out reorganization plans has been made in the Federal Court at Minneapolis, Minn., the petitioners including the Minneapolis Moline Power Implement Company, McGill

Paper Products, Inc., Carnegie Dock and Fuel Company and other interests.

New Companies

New York, N. Y.—Tissue Brands, Inc., has been incorporated with nominal capital of $2,000, to manufacture and deal in tissue paper goods of various kinds. The incorporators are William H. Miner, 237 West Twelfth street, New York, and William J. Cunningham, 479 Barnes avenue, Grant City, Staten Island.

St. Louis, Mo.—The New Deal Products, Inc., has been organized by F. S. Small and John T. Abels, both St. Louis, to manufacture paper tags and other paper products.

New York, N. Y.—S.W.C., Inc., has been chartered under State laws with capital of $30,000, to manufacture and deal in paper products of various kinds. The incorporators include Stanley W. Cook, Northampton street, Holyoke, Mass., and Joseph Kastner, Jr., 41 Park Row, New York, N. Y.

Brooklyn, N. Y.—The General Poster and Ticket Company, Inc., has been incorporated with capital of $5,000, to manufacture paper posters and other paper goods. The incorporators are Samuel Grossman, 338 Rockaway avenue, and John J. Kiernan, 23 Pleasant place, both Brooklyn.

Boston, Mass.—The National Paper Company, 2459 Washington street, Roxbury, Boston, has filed notice of organization to deal in paper products of various kinds. Company is headed by James Berry, address noted.

Bantam Tapered Roller Bearings

The new catalog on Bantam Tapered Roller Bearings just published combines conciseness with a very thorough treatment of load carrying capacities and other pertinent information on Tapered Roller Bearings. Every effort was made to give complete and accurate information on true load carrying capacities without confusing the issue with complicated and long drawn out calculations.

The Taper Bearing section is but one of several which will comprise the complete Bantam Anti-Friction Bearing Catalog. It will be followed soon by the Engineering Section. This section will cover many important details of proper bearing selection and usage such as method of mounting, shaft and housing design, fitting practices, fatigue life, sealing devices, proper lubrication, the calculation of combined radial and thrust loads, and many points of interest to operating officials.

In addition to the Tapered section and the Engineering section just described, the following sections have been or soon will be issued: Quill Roller Bearings, Printing Press Bearings, Straight Roller Bearings, Straight Roller Thrust Bearings, Journal Bearings, Ball Radial Bearings and Ball Thrust Bearings.

The Bantam Ball Bearing Company will be pleased to furnish copies of the Taper Roller, Quill Roller, and Printing Press Bearing Catalog Sections to operating officials, Engineers and Designers. To assist in making the proper distribution of these catalogs the Bantam Ball Bearing Company requests that you use your business letter head and indicate your official capacity when requesting copy.

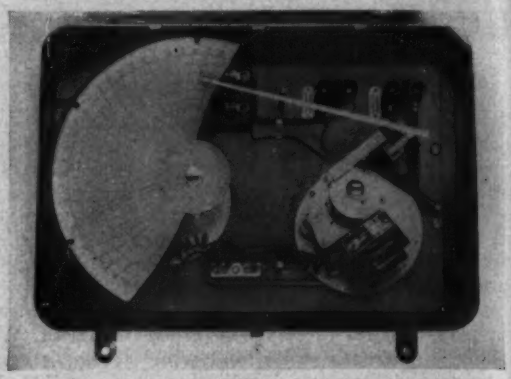
To Represent M. & O. in Texas

The Minnesota and Ontario Paper Company announces the appointment of Mr. William W. Ball as its Texas newsprint representative, located at Cliffton Hotel Apartments, Dallas, Texas. Mr. Ball has a large acquaintanceship among Texas publishers, and has for many years been engaged in the Southern paper trade.

Bristol Co.'s Spiral-Record Cam-Operated Electrical Operation Recorder

The Bristol Company of Waterbury, Conn., is now offering an electrical operation recorder, which provides a long record on a fast moving round chart. This instrument, instead of making one circular record, draws a spiral curve starting at the outer edge of the chart and gradually moving toward the center. This spiral record is accomplished by a telechron cam which continuously resets the record making movement.

This instrument is meeting great favor in time study work since it provides an open record with the easy filing



and ready reference characteristics of the round chart. One form of this instrument is fitted with a chart driving clock, making one revolution per hour and with a separate telechron motor driven cam making one revolution in 8 hours. The resulting record is a spiral curve covering 8 rotations of the chart and with approximately ¼ inch spacing of the record line.

The mechanism which records the occurrence of an operation is a small electro-magnet which is energized when an external circuit is closed. The movement of this magnet actuates the pen arm and moves the inking pen approximately 1/16 of an inch.

The entire movement is housed in the popular Bristol's Moistureproof rectangular Model 40M case.

Simplification of Paper Cones and Tubes

The National Bureau of Standards announces that Simplified Practice Recommendation R143-33 has been reaffirmed without change, other than the addition of a cone for asbestos roving. This addition will be incorporated in the recommendation when the book is reprinted.

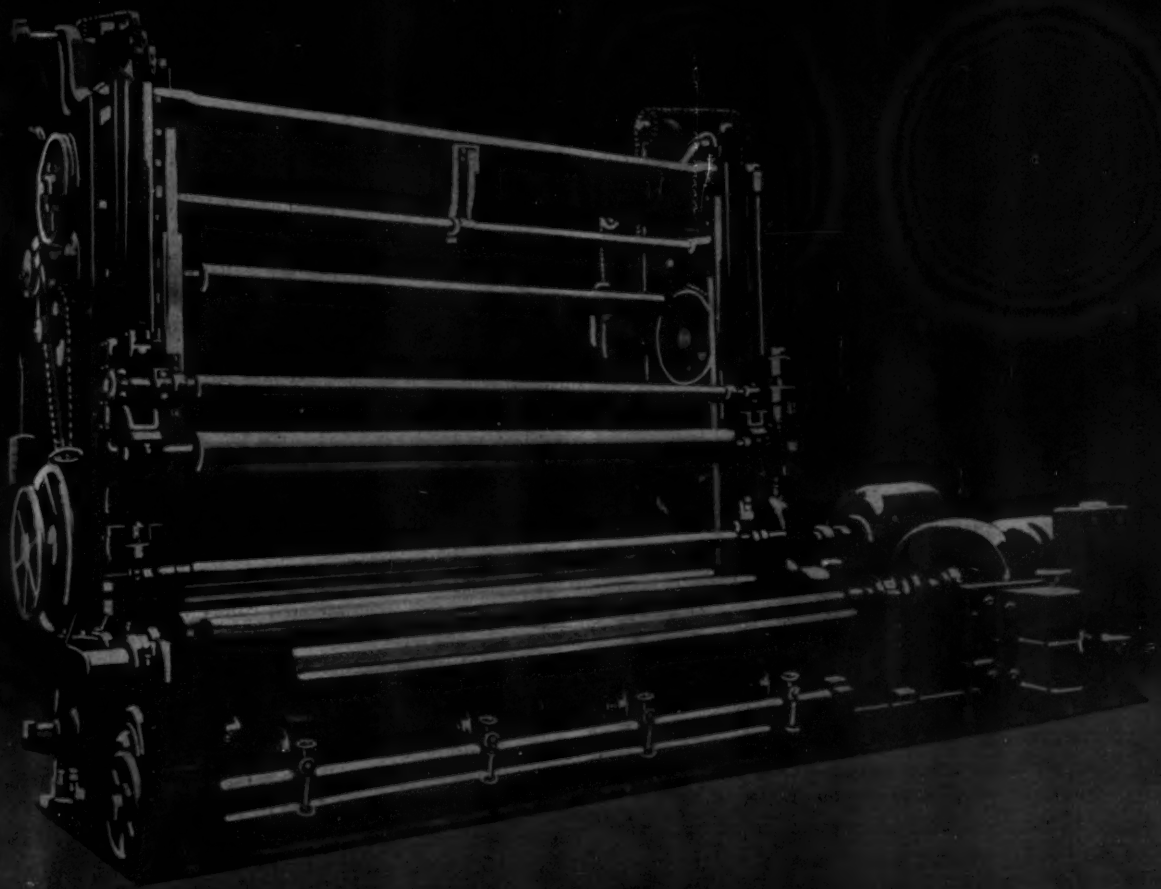
This recommendation, which was proposed and developed by the industry, provides for the length, inside diameter, weight per thousand, color, and use of paper tubes, and for the length, inside diameter at base, taper, weight per thousand, traverse, use, and color of paper cones. These cones and tubes are used in the textile industry for winding warp and knitting yarns, silk, rayon, hosiery yarns, tire cord, thread packages, wire insulating yarn, asbestos roving, etc.

The reaffirmed recommendation with the additional cone became effective March 15, 1934.

Estate of Philip Weston

[FROM OUR REGULAR CORRESPONDENT]

PITTSFIELD, Mass., June 12, 1934—The inventory of the estate of the late Philip Weston of Dalton was filed last week showing real estate of $11,583 and personal estate of $466,105. The holdings include 986 shares of the Byron Weston Paper Company appraised at the value of $214,948.



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ESTABLISHED 1872

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COMING EVENTS

American Pulp and Paper Mill Superintendents' Association, annual convention. Headquarters Poland Spring House, South Poland, Me., June 20-22, 1934.

Technical Association of the Pulp and Paper Industry, Fall meeting. Headquarters Multnomah Hotel, Portland, Ore., September 10-13, 1934.

BEST YEAR SINCE 1929 IS PROSPECT FOR PAPER BOX INDUSTRY

With the general improvement in business, most firms in the paper box industry expect to close 1934 with the largest profits that have been booked since 1929. During the uninterrupted downtrend of trade from 1930 to the close of the first quarter of 1933, volume was dependent almost entirely on the requirement of manufacturers of packaged foods, canned goods, clothing and shoes. During the past six months, however, there has been a sudden increase in the number of active small accounts, whose products could be classed more or less as luxury items. This indicates that there is a market and a demand developing beyond the so-called "necessity" trades. With the way now being opened for small manufacturers to obtain loans more readily, many of these units will be placed in a position to contribute a larger total to the general volume of business, according to a survey of the paper box industry, which has just been completed by Dun & Bradstreet, Inc.

The rush of orders which swept into manufacturers during the early Summer of 1933, when prices were rising from week to week, made the adoption of capacity schedules necessary. These were maintained until September, when operations tapered off gradually until December, at which time the unexpectedly heavy holiday demand lifted the rate nearly to the Summer peak. While the current year opened with orders ahead of production, and operations close to capacity, a slowing down has been in evidence since February and by May general schedules had receded to around 60 to 70 per cent of capacity, or nearly double the rate for the first five months of 1933.

Inventories, which were up sharply at the first of the year, however, practically have been cleared in many divisions, and as road salesmen are sending in larger orders than last year at this time, the Summer recession in production will be considerably less than seasonal. Besides, beginning with September the comparative monthly gain over last year is expected to be widened, as in 1933 most of the orders which ordinarily were placed in these months had been crowded into June, July and August. Operations in all divisions have been sufficiently high since last Summer to permit profits for the majority of producers, notwithstanding the increased cost of manufacture.

Sales to the millinery trade, candy manufacturers, producers of food products, and wholesalers of hardware are exceeding the totals of 1933 by nearly 100 per cent, while retailers of clothing, shoes, automobile supplies, and stationery are taking the largest quantities of boxes in years. In the set-up box division, which follows closely the trend of retail trade, sales are above the average of the last three years. Buyers continue to favor the low-priced folding boxes, which are among the best selling items, but demand is enlarging for fancy set-up boxes, particularly the satin-covered and embossed styles. Sales of candy boxes of the better grades have increased 30 to 40 per cent over a year ago, even though the demand has been slower since the middle of April.

The use of corrugated shipping containers has been stimulated greatly by the repeal of the Eighteenth Amendment. Although most of the beer still is being shipped in wooden cases, some of the leading breweries are using corrugated paper cartons, and the trend is definitely toward paper. Likewise, practically all of the spirits and liquors are being shipped in paper cartons, against wood which was used exclusively prior to prohibition. In addition, during the past year, distribution of most brands of motor oils, put up in cans, has been in paper shipping cartons.

Sales in the drought-stricken districts, which had been running 25 to 40 per cent above the comparative 1933 figures, have slowed down preceptibly. While being maintained at present above last year's volume, the current rapid rate of decline is expected to bring a loss in the comparisons during the Summer months, as the outlook for Fall recovery in these districts is becoming less favorable with each week's lack of rain.

The average of prices for all divisions at the beginning of June was held firmly at a level 30 to 50 per cent higher than at the comparative period a year ago, and nearly double the average at the close of the first quarter in 1933, at which time nearly an all-time low was recorded, as the widest mark-up did not occur until the middle of the Summer, when the extraordinary demand brought a shortage of raw materials. During the years of the general trade recession, probably no other commodity sold so persistently below the cost of production as paper boxes, so that the price rise from that position has been a moderate one.

In the set-up box trade, prices average 30 to 40 per cent higher than last year, with the level well maintained, due to the uniform cost system that was included in the code. In the folding box trade, on the other hand, there are many instances of price cutting, with orders deferred because of the fluctuations, as no uniform cost system has been found, as yet, which would work satisfactory in this branch of the industry.

Weakness has developed in the paper board market, following the mark-up of 100 per cent during the second quarter of 1933, when a shortage occurred, because of lack of raw material, as the price offered for waste paper had been so low that it did not cover the cost of collection. Most mills now are working on curtailed schedules, holding output close to demand.

The steady decline in failures during the last half of 1933 has become more noticeable in the five months of the current year, as the monthly average of paper box manufacturers declared bankrupt was reduced to 1, from 2 in 1933, and 3 in 1932, while the monthly average of the defaulted indebtedness has dropped to the lowest figure since 1930. Following the persistent increase in the number of failures during 1931 and 1932, the total for 1933 fell to 20, a decrease of 42.9 per cent from that of the year preceding, while the defaulted indebtedness was only $508,429, or a decline of 44.5 per cent from the amount set down for 1933.

Code Authority to Get Contract Reports From Paper Distributing Trade Members

National Recovery Administrator Hugh S. Johnson last week announced his approval of a request by the Code Authority of the paper distributing trade for leave to require from members of the trade reports giving:

1. Details of all contracts with buyers with respect to which any member proposes to claim exemption under a provision of the code exempting bona fide contracts in existence on the effective date of the code; and

2. The details of all contracts which state delivery in cases where the contract price shall for any reason fall below the filed price or replacement cost of such members.

Approval of the above requirements was given on representation by the Code Authority that protection of the members of the trade made it essential that full information regarding contracts, valid or otherwise, be available to the various regional secretaries in order to afford a means of verifying claimed exemptions and prices which appeared to be in violation of the accounting and sales provisions of the code.

Proposed Revision Paper and Pulp Code

WASHINGTON, D. C., June 20, 1934—The National Recovery Administration today announced that a public hearing will be held June 29 in the Hall of Nations of the Washington Hotel by W. W. Pickard, deputy administrator, on the proposed modification of the code for the paper and pulp industry. The application for the modification has been submitted by the American Paper and Pulp Association, claiming to represent 90 per cent of the industry.

The proposed modifications constitute a general revision of the code.

Uses Pine to Make White Cardboard

"For the first time in paper-making history, southern slash pine today was made into a white cardboard liner at the plant of the Mobile Paper Mill company in Crichton," says the *Press of Mobile, Ala.*

"Using pulp from the laboratory of Dr. Charles Herty in Savannah, Ga., where pulp has been made with which to manufacture successfully the first white newsprint for newspapers from the southern pine, the liner was pronounced a better product than that made from the pulp which the mill has in the past imported from foreign countries.

"Cardboard was manufactured today at the mill in five plies. One ply is the white liner, three plies are fillers made from old scrap paper, and the other outside coat is made from old newspapers.

"The market price on the pulp, as produced by Dr. Herty at Savannah, is now $26 to $28 per ton, from foreign markets. R. E. Hartman and associates, who operate the Mobile mill, believe that by putting in a grinder, they can use pine from the local market, and produce the pulp at $12 to $13 per ton, not only greatly reducing the cardboard prices, but creating a use for southern pine.

"It is also foreseen that, if the pulp is produced commercially in the south, instead of imported, two plies—both the inner and outer liners of the board, could be made in white, instead of the inner liner being made from the pulp of old newspapers. Old newspapers now are selling at the approximate price the Mobile mill believes the southern pine pulp can be produced."

Paper Bag Salesmen Optimistic

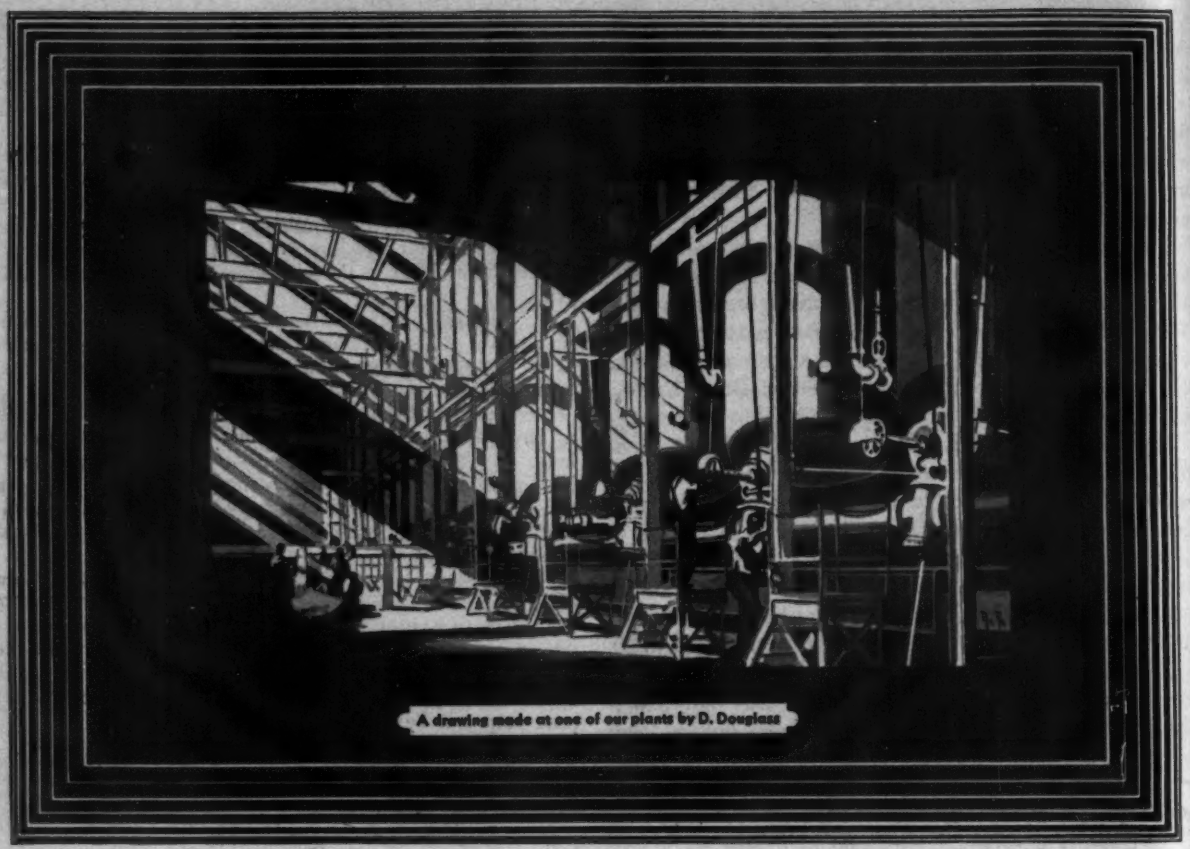
[FROM OUR REGULAR CORRESPONDENT]

HUDSON FALLS, N. Y., June 18, 1934—A meeting of salesmen of the Union Bag and Paper Corporation was held this week here for the purpose of discussing general business conditions. About thirty-six representatives from various sections of the country attended the sessions which lasted three days. Discussion brought out the opinion that the paper and bag business in general in this country is good and indications are that the various branches will continue to be operated near capacity. Prior to departing for their homes the salesmen were tendered a banquet at the Glens Falls Country Club where officials of the local plant acted as hosts.

Among those attending the sessions were the following: W. L. Alexander, James Duffy, Edward Corrent, Walter Decker, Grant Eustis, Daniel Cooney, Richard Griffin, Oscar Kindberg, W. C. Mansfield, Walter Kirch, Edward Rickel, L. B. Miller, T. E. Duffy, Harry Thiermann, B. B. Tottingham, Robert Wirfel, H. S. Daniels, P. E. Bonin and C. E. Hanson, all of New York; George Carson, New Haven, Conn.; William Stark, Fred Hinkle and Thomas Lawley, of Philadelphia; Abbot Cox, Joseph Harkey, Boston; L. H. Harris, Charlotte, N. C.; A. J. Kister, Pittsburgh; Thomas Hodgson, Atlanta, Ga.; Howard Pratt, Lenox Ransom, Baltimore, Md.; A. J. Rappold, of Syracuse, and B. E. Weathers, Chicago.

A. S. T. M. Paper Testing Meeting

The American Society for Testing Materials will hold its annual meeting at Atlantic City, N. J., and extends an invitation to TAPPI members to attend the meeting of its Committee D-9 Sub-committee 8 on Papers and Fabrics for Electrical Purposes. This meeting will be held on Wednesday, June 27, from 1 to 5 p.m. at the Haddon Hall Hotel. There will also be a meeting of Committee D-8 on Bituminous Waterproofing and Roofing Materials.



A drawing made at one of our plants by D. Douglass

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NEW YORK, N. Y.

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Forest Supplies of Pacific Northwest of Interest To the Pulp and Paper Manufacturer*

By Thornton T. Munger[1]

Within the last decade and a half there has been a notable migration of the pulp and paper industry to the Pacific Northwest; still further growth of the industry in this region seems probable. The principal reason for establishing so many pulp and paper mills here is, of course, the availability of a seemingly inexhaustible supply of wood. Not only is the wood supply very large, but it is accessible to tidewater, and is purchasable on reasonable terms from either public or private owners. Furthermore, the area of permanent forest land is large and has a high capacity to grow successive crops of timber.

I use the term "inexhaustible supply of wood" advisedly; the present virgin supply could, of course, be exhausted, because no forest is inexhaustible if it is used as a mine. But forests are a renewable resource and can be used indefinitely without depletion if treated properly. They reproduce themselves, and they grow. If the wood-using plants are limited in capacity to the forest productivity of the adjacent territory, there is no excuse for exhaustion of the supply of raw material.

The first pulp and paper mills in the northeastern and the Lake States supposed that the forests about them were inexhaustible, but mills were multiplied far beyond the capacity of the local forests to supply them, and in addition the logged lands were in many instances cut and burned so destructively that they did not remain productive.

We know that no repetition of this situation is probable in the Pacific Northwest, but it is not amiss for the industry to know exactly where it stands with relation to present and sustained supplies of wood. In these days of planned industrial development, it would be well to know how many pulp mills our forests can sustain permanently, for this is one of the factors to be considered in directing or controlling the multiplication of mills. This is desirable for each natural industrial district, for an excess of manufacturing capacity in one economic unit can not be compensated by an insufficiency in another.

Questions as to the present and prospective forest supplies in the Pacific Northwest are now in a fair way to be answerable, for the Forest Service is well along on a very detailed survey of the present stand of forest resources, of their rate of depletion and of their rate of growth. This survey is practically complete for western Washington and western Oregon, and I propose to give you today some of its findings that have interest to the paper industry and that have not heretofore been published.

The data I shall use concern only western Washington and western Oregon, partly because I have only for that region these new and very dependable forest statistics, and partly because it is a rather distinct industrial unit by itself, though obviously interrelated in its timber supply and marketing conditions with northern California, the Inland Empire, British Columbia and Alaska.

Western Washington and western Oregon have some 22 species of trees that occur in considerable quantity and might be made into pulp, recognizing that almost any wood will make paper. Which of these shall I consider as pulpwoods in trying to give you an estimate of the supply of raw material in this region?

Douglas Fir

Douglas fir, which comprises 40 per cent of the saw-timber stand of western Washington and 77 per cent of that of western Oregon, is, of course, the dominant tree of the region. It is used to some extent for kraft papers and board; the Madison Laboratory of the Forest Service has made experimentally some very nice sheets of white paper by the semi-sulphite process. Apparently by no now known process is Douglas fir a competitor of the primary pulpwoods for the better classes of paper, and in the kraft field it comes into keen competition with other species like jack pine of the Lake States and the southern pines, of which the potential supply available for pulping is enormous. Of Douglas fir in Western Washington and western Oregon there are some 340 billion feet, but for the purposes of this discussion we will not include Douglas fir as a pulpwood.

The cedars, the pines, the larches and the hardwoods, except cottonwood, will likewise be left out of consideration as sources of pulpwood supply. There remain then as the primary pulping species of the region, the spouces, the hemlocks, the balsam firs (or white firs) and cottonwood.

* Presented at the Spring Meeting of the Pacific Section of the Technical Association of the Pulp and Paper Industry, Seattle, Wash., April 6 and 7, 1934.

[1] Director, Pacific Northwest Forest Experiment Station.

Spruce and Hemlock

Just a word about the several species, both those now used and those likely to be used in the future. The spruces are, of course, the most prized of pulpwoods. Oregon and Washington have two species (ignoring the very rare weeping spruce of the Siskiyou Mountains). Along the Coast strictly within the fog belt is Sitka spruce, 6¾ billions of it in Washington and nearly 5 billions in Oregon. It is now used largely by the Puget Sound and Columbia River paper mills, but it is likewise in demand by the veneer, cooperage and lumber mills. Engelmann spruce occurs in the high country, mostly on the national forests, but there is only about ¼ billion feet west of the Cascade Range summit.

Of the hemlocks there are two species, the common western hemlock characteristic of the slopes of the Cascades and Coast Range, and the mountain hemlock which prevails at altitudes above 4,000 or 5,000 feet. The former is now largely used for pulp and for lumber, but the mountain hemlock is above present logging development. Western hemlock is most abundant near the Coast and in the north, and the proportion of this species in mixture with Douglas fir diminishes on going south along the Cascades. Washington, therefore, had much more hemlock originally, and has much more left than Oregon. The figures for western hemlock are 80 billion feet in Washington and 26 billion feet in Oregon. The estimates of mountain hemlock are a little over 5 billion feet for both states, an auxiliary supply for the future.

The Firs

The balsam firs or white firs or true firs, as they are sometimes called, are members of the genus Abies, and there is so much confusion about them that a word of description may not be amiss. There are six of this family in Washington and Oregon, they look very much alike and are therefore often confused; their common names are badly jumbled in usage. They are close cousins to the eastern balsam fir used by the eastern Canada, northeastern and Lake States pulp mills. They are all good pulping species. One of the six, lowland white fir, is a tree of the low country, and is therefore commonly encountered in present logging and pulpwood operations. The other firs are trees of the mountains and little cut at present. These mountain-loving balsam firs, as called by the Forest Service, are silver fir, noble fir, Shasta fir, white fir and alpine fir. They must be regarded as an important reserve supply available when logging works farther back into the hills. The estimate of the sawtimber volume of all the six species is 33½ billion feet in Washington and in Oregon 14½ billion feet, of which silver fir comprises about two thirds.

Cottonwood is the last species to be mentioned as a pulpwood. It was the mainstay of the first local paper mills and is still used largely by some. It is difficult to estimate the supply of this species because it occurs so scatteringly as fringes along the watercourses and as single trees here and there on farms. The forest survey estimate is a quarter of a billion feet about evenly divided between the two states.[2]

[2] The estimates herein given are the log scale contents of trees suitable for sawtimber and over 16 inches in diameter. A better standard of estimating pulpwood supplies would be the entire cubical contents of all the trees, or the cordwood content, since pulpwood cutting utilizes more of the tree and more of the smaller trees than do sawtimber operations. The forest survey will have eventually estimates in cubic feet for the entire stand, but the compilations are not yet complete. I am therefore compelled to use today the board-foot sawtimber estimates only. With certain species the trees under 16 inches in diameter comprise a very considerable portion of the stand which the pulpwood cutter might use. The estimates that I am giving for board feet of sawtimber are therefore quite conservative in appraising the supply available for the pulp industry.

Adding up now the estimated supply in western Washington and western Oregon of the spruces, hemlocks, balsam firs and cottonwood—considering the sawtimber trees alone and disregarding the small trees, tops and mill waste that would be available for the pulp mills—we have 171 and a fraction billion feet. This is equivalent to over a half billion cords or 36 times as much wood as was needed to satisfy the paper requirements of the whole country in 1931. This present supply of so-called pulpwoods is 250 times the annual requirements of the present installed paper mill capacity of the region, even if they all ran 24 hours a day and used forest wood or sawlogs exclusively. These are rather meaningless comparisons for but a fraction of this great storehouse of timber of the pulpwood species can be considered as available for the pulp and paper industry.

Wood for Lumber and Pulp

Every one of these species has value for other purposes. To some extent the sawmills and the paper mills will compete for their raw supply. This will be the case particularly with Sitka spruce and cottonwood, the amount of which is not commensurate with the demand there is likely to be from both industries. The sawmills are now cutting for lumber 2½ times as much of the pulpwood species as the pulp companies are logging for pulp purposes.

However, the prevailing relationship of the paper mills and the sawmills in the Pacific Northwest is reciprocal, rather than competitive. One of the soundest features of the set-up of the forest industries in western Washington and western Oregon is the integration between the paper industry and the sawtimber, veneer and other wood-using industries. I expect and hope that this complementary relationship will go even farther. There are a few instances in the region where lumber manufacture and paper making are carried on under the same roof and ownership. Such harmonized forest industry should insure that every log and every part of every log is put to its best and most thrifty use.

Let me explain various aspects of the integration of the pulpwood and sawtimber utilization of the forest, both those now in effect and those that might be. I will mention four ways in which the two industries do or should be complementary to each other: (1) sorting of logs; (2) utilization of woods waste; (3) utilization of sawmill waste; (4) thinnings or improvement cutting in the growing forest.

Sorting Logs

(1) Sorting of logs—In the usual Douglas fir sawtimber logging operation where clear cutting is practiced, there is ordinarily a certain amount of hemlock, lowland white fir and low grade spruce not wanted by the sawmill man, which he is glad to sell to the pulp man for practically the cost of production. Some of the paper mill supply therefore comes as a by-product of the sawlog operation, on terms beneficial to both industries. How much of the present pulp mill consumption of wood consists of logs that would otherwise have been left in the woods by the sawmills' logger and wasted, it is hard to say. Certainly a good proportion of the small and rough hemlock mixed in the forest with the sawtimber and fir and cedar finds its only present economic use when turned over to the pulp mill. On the other hand, paper company loggers operating primarily in pulp species are glad to sell to the sawmill or the veneer plant the higher grade spruce and hemlock logs and the nonpulping species. These high grade logs are too valuable to turn into pulp; they are worth more to other industries. Thus does each industry utilize the intermingled products of the forest which it most wants and can best afford. It is obvious that very much more might be done in intensify-

ing this coordinated use of the forest in territory common to both industries.

Where sawmill and pulp mill are closely affiliated, it is sometimes the practice to divide the individual log, so to speak, between the two industries. The log is broken down in the sawmill, the clear flitches are saved for lumber and the coarser portion, which would otherwise be of marginal use for lumber, goes for pulp, where it is as usable as the best.

Logging Waste Utilization

(2) Utilization of logging waste: Only about one-third of the average tree as it stands in the forest eventually reaches the consumer in the form of lumber. An appreciable portion of the unutilized two-thirds is left in the woods, either because it was shattered during logging, because it was too small or of too low a quality to yield a return commensurate with the cost of manufacture, or because it was overlooked in the hustle and bustle of our modern high-speed logging. Improved methods of logging are increasing the degree of utilization. But there will continue to be an almost staggering amount of nonutilized material every year in the Douglas fir region. This is a source of supply which may supplement the timber harvested primarily for the pulp industry. Much of it is made up of species not adapted for pulping under present processes and market conditions. But appreciable quantities of the present logging "waste" are of species suited to and now used in the manufacture of pulp and paper.

A survey of logging operations in western Washington and Oregon during 1925 and 1926 indicated that for every thousand feet of sawlogs of the pulpwood species (western hemlock, Sitka spruce, and the balsam firs) taken out of the woods, about one and one-third cords of pulpwood size and quality were left on the ground.

To date no profitable method of salvaging the waste on most logging operations has been found. The trials which have been made, such as prelogging, relogging and the use of portable chipping plants in the woods, have met with but indifferent success. With the pulp and paper industry firmly established in this region under the expectation of continued production and expansion, the operators in this industry should be vitally interested in developing ways and means of more completely and more profitably utilizing logging waste. Further research toward this end by public and private agencies should yield excellent returns in the form of increased stumpage values and manufacturing returns, and at the same time reduce the drain on the forests and prolong the time during which raw material costs will remain low.

Sawmill Waste Utilization

(3) Utilization of sawmill waste: The utilization of "waste" resulting from the manufacture of lumber presents a more encouraging picture. Only a relatively small part of the slabs and trims of pulpwood species now finds its way to the burners, and then mostly in mills so remote from large centers of population that transportation costs are out of proportion to the return on the product. A survey in 1929 showed that the pulp industry in Oregon and Washington utilized 213,000 cords of slabs, edgings and trims and 225,000 units of pulp chips, all originating as by-products from the manufacture of 1,760,000 M feet of lumber. That the pulp and paper industry is awake to the possibilities in sawmill "waste" is evidenced by these figures, as well as by the fact that in recent years over one-third of the pulpwood used in Washington has been reported as originating as by-products of lumber manufacture. But research on the utilization of sawmill waste may discover more economical methods of handling and processing this material, thus contributing to its better and more complete utilization. In this, as well as in logging waste utilization, the pulp operator and the lumberman have the same interests at stake.

Thinnings

(4) Thinnings or improvement cuttings in the growing forest: As the supply of cheap accessible virgin stumpage wanes and as forest management becomes more intensive, the young growing stands of the future offer a very profitable field for reciprocity in sawtimber and pulpwood production. Young stands of fir, hemlock and spruce are ordinarily too thick for their own good. By cutting out perhaps a quarter of the trees at the proper time, the others will grow faster and yield more and better timber at maturity. The pulp industry can use small trees as well as large, so that in the spruce-hemlock belts these young stands could well be thinned for pulpwood and thus improved for the growing of sawtimber on a longer rotation. Pulpwood production would then be a by-product of sawtimber growing. In well managed forest properties the possibilities for producing pulpwood as a by-product of sawtimber growing are something to be looked forward to in a big way.

For those who are looking to the future, the potential productive capacity of the land is of more real consequence than the present stand of merchantable timber. Regardless of the volume of the present stand, it would be exhausted in time were there no growth. But forests are a renewable resource; the rate of growth of these Pacific Coast forests is high; the acreage of permanent forest land is large. A paper mill with its huge investment must be assured of a very long-time, if not a permanent, raw supply. The log markets of Puget Sound, Columbia River and Grays Harbor are not a dependable source of pulpwood. Paper mills prefer to have their own supply in ownership or under contract. To carry a many years' supply of virgin stumpage entails a needlessly large capital outlay. The wood supply for 2 or 3 decades hence can be grown upon the land now covered with young stands or upon land yet to be logged. A permanent supply of forest wood can thus be assured by controlling and managing on a sustained yield basis a private tract whose annual productive capacity is sufficient to stock the mill. Some plants are situated so as to purchase some of their future supply from public lands if they so choose.

One phase of the forest survey of western Washington and western Oregon now nearing completion is a study of the current growth and of prospective future growth of the permanent forest lands of the region.

Though this study has been completed for only about fifty per cent of the commercial forest area, and this chiefly outside the national forests, it appears that the large area of virgin timber is stagnant in growth, that a considerable area of logged land and burn is so devastated as to be at present almost unproductive, and that the several million acres of immature forest are putting on volume of wood equivalent to about one billion board feet a year. However, it is expected that in 20 or 25 years, with the conversion of stagnant virgin stands into young growing stands and with better fire protection, the actual growth for the region will have stepped up to about 3 billion board feet a year.

In the more distant future when the nongrowing old stands are out of the way and all lands are in producing condition, it is estimated that the potential annual growth for the region will be 7 billion board feet, without assuming absolutely full stocking or perfect fire prevention or very intensive utilization.

These growth estimates, namely, 1 billion feet a year at present, 3 billion feet a couple of decades hence, and 7 billion feet in the more distant future are for all species of the region. Perhaps a quarter or a third will be of the principal pulping species.

Annual Pulp Wood Consumption

Thus it appears that the present annual consumption of the western Washington and western Oregon paper industry, some million and a third cords (equivalent to about 400 or 500 million board feet of sawtimber) could easily be met by the annual growth of the forest area 20 years and more hence. With intensive forestry the forest acreage would support in the more remote future an even larger industry, provided the paper mills got their due quota of the dual purpose woods in competition with the sawmills, veneer plants, etc.

These are big figures. They are very reassuring. The Pacific Northwest has without doubt the growing capacity to produce for all time a very large volume of timber, of which enough can be of the acceptable pulpwoods to stock in perpetuity more mills than there are at present. This, of course, can be accomplished only if the lands that are logged over are kept productive, and if fires are controlled. The more intensive the forest management the better and larger the future forest crop will be. Special care to provide a seed supply after logging, or intelligently conducted selective logging, plus skillful slash disposal, subsequent fire prevention, thinnings, etc., will increase the yields over what has been assumed and often improve the quality of the yield; for example, increase the proportion of spruce as against hemlock.

I have given you enough data, I believe, to show rather convincingly that the pulp and paper industry of western Washington and western Oregon is situated very favorably with reference to its supply of wood. There is enough pulp timber standing in the forests now to stock all the present plants many, many years, and to justify considerable expansion in the industry.

The sawmills acting as a complement to the pulp mills can furnish to the advantage of both industries by-product, low grade logs, slabs and edgings that alone will go a long way toward stocking the pulp mills.

The great acreage of highly productive forest land, if given proper treatment, has a permanent productive capacity of spruce, hemlock, and balsam firs far in excess of the present installed pulp mill capacity.

An existing plant or a projected plant is naturally chiefly interested in more localized estimates—in the sufficiency of the immeidately tributary forest supplies, their ownership, rate of depletion and growth. The forest survey to which I have referred as the source of my data, will soon issue detailed inventory data for each county by ownership classes, and also an analysis by economic units of the whole forest supply situation.

This material will be of interest to those in the paper industry who have occasion to look closely into this matter, and will be available to them.

Maintenance Problems in the Paper Mill*

By H. E. Hosmer[1]

With the development of machines came the development of mechanics to fabricate the parts and assemble them into the finished articles. The evolution of both machines and mechanics has been marvelous when we consider the speed of manufacture and accuracy of workmanship that present day production methods demand.

There was a time when industry was confined in "one man shops." If his equipment failed, as many employees as were needed turned to and did the repair work in some sort of fashion. We are all aware of the changes, gradual at first, then impetuous, which have brought about our present industrial organizations. We are also aware of the development of the men who did the repair work in the "one man shops" into the skilled mechanics of today who prevent failures by means of a well organized maintenance department. I believe one trip through a well organized repair shop will teach any skeptic that the maintenance crew who contributes so largely to the satisfactory operating conditions throughout the plant is an interested and intelligent group.

The duties of the maintenance department in the operation of any manufacturing concern depend upon the policy of the company and the condition of the plant. In the average modern plant it is a matter of primary importance for the maintenance engineer and his department to devote their entire time to the task of performing their work in the most consistent and systematic manner.

The paper mill is like one enormous continuous machine, representing large financial investments, its productivity and earning power of the utmost importance, and the maintenance department which is in reality a service department, should keep satisfactory service relations with those who carry the responsibility of production, ready at all times to assist them with their problems. And I believe greatly improved service will result if a little thought is given to cooperation of this kind by both the production and maintenance forces.

Reasons for Mechanical Failures

There are several reasons for mechanical failures, the most outstanding are, (1) Faulty design including the use of wrong materials and insufficient strength, (2) Unusual overloading conditions or improper operation, (3) Insufficient maintenance and lack of inspection, (4) Incorrect lubrication involving improper application and the use of inferior lubricants.

Number 1, must be credited to the manufactures.

Number 2, The responsibility may be divided and I believe that here is a case where the close cooperation between production and maintenance may be valuable. If, for instance, it is desired to increase the speed of a machine, maintenance if fore-warned may do much to repair or replace weak parts and put the machine in the proper condition to stand the added strain, rather than take a chance and suffer a long shut down.

Inspections

Number 3, Despite all precautions and regardless how thorough the inspection may be, breakdowns will occur, but a properly planned and organized inspection system will go a long way in eliminating the losses from that part of equipment which is mechanically correct. I believe such a system to be the most important function of maintenance.

* Presented at the meeting of the Delaware Valley Section of the Technical Association of the Pulp and Paper Industry, Philadelphia, Pa., April 27, 1934.

[1] Plant engineer, Scott Paper Company, Chester, Pa.

It should be composed of men of exceptional mechanical ability and having keen senses.

Their reports should be kept on proper forms and should be filed in the office of the maintenance engineer. From the information given in these reports defective parts, which might otherwise pass unnoticed until the breakdown occurs, may be watched and repaired or replaced before it and other connecting parts fail and cause a lengthy shut down.

Many a bearing has been saved by timely lubrication and many a break has been forestalled by the few minutes use of a wrench. Hot bearing, vibrating shafts, slipping belts and rumbling gears are not found in a plant where a good inspection system is in operation. Inspectors should be furnished with data on the construction, operation and care of the equipment that comes under their care, and I do not believe the smallest mill can afford to be without the services of at least one capable man, a part of whose time should be spent in a thorough investigation of the machinery.

Lubrication

Number 4, Regardless of the type of equipment, whether it is old or modern, correct lubrication is an important factor, it reduces power losses, assists materially in the prevention of breakdowns, reduces the cost of repairs and renewals and preserves the equipment for continued service.

The wide variations in equipment and the details of arrangement makes it impossible to describe all methods of application. For plain bearings, the wick and bottle oilers are reliable and provide an economical and uniform flow of oil. The one disadvantage of the wick oiler is that oil continues to flow when the equipment is idle. Bearings equipped with ring, collar or chain oilers give good service, as they receive a continued flow of oil with very slight waste of the lubricant.

Grease may be applied by grease cups or with the grease gun. Open bearings are fitted with a tray or housing. to hold the grease, and should have a cover to exclude dust, dirt and moisture. Oil is generally recognized as the best lubricant for anti-friction bearings, however it is necessary to have all seals in perfect condition to keep out the dust and water and to prevent the loss of the oil which not only is costly but is likely to get on the clothing and product. The circulating system provides an excellent means of lubrication for machines equipped with anti-friction bearings as each bearing is always provided with a bath of freshly filtered oil. Grease is much easier retained in ball or roller bearings, but after the first application more or less guess work enters into the problem as there is no way of knowing the amount of lubricant in the bearing, furthermore grease does not possess the separating qualities found in good oil. I wonder how many mills give this most important matter the attention it deserves. Lubrication should be supervised by capable men, acquainted with the construction and requirements of modern machinery. A proper storage should be provided to prevent contamination by dust, dirt and water or the mixing of the lubricants. Oils and greases should be properly marked as their use in the wrong place may prove costly. I am sure that a properly planned system of lubrication will be reflected in a reduction of costs and prove a step toward uninterrupted operation.

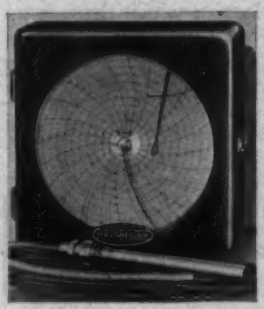
Safety Engineering

There is a subject I wish to mention, briefly a general problem of all departmental heads and foremen, but not strictly a maintenance proposition. "Safety." Safety as applied to industrial plants covers the whole subject of compensation laws by the state has impressed upon the plant managers the importance of accident prevention and even if we disregard the humane side of accident prevention, the fact remains that accidents are very expensive.

The guarding of all dangerous machinery will prevent many accidents, but that is not enough. Unsafe clothing, especially foot-wear, dirt, disorder, defective tools and careless practices of employees. All go to cause accidents and prevention of accidents can only be successful if both the mechanical safeguarding and safety educational work are thoroughly done. Proper instructions should be given employees regarding the hazards of their work, insist upon prompt treatment for all injuries, regardless how minor, educate the man to think safety and as a very capable Safety Engineer told me, "Watch for the four D's—Dirt, Disorder, Danger, and Disease." Get rid of them.

A New Recording Thermometer

The Mason-Neilan Regulator Company, manufacturers of automatic regulating and controlling equipment, has just announced a new recording thermometer which is represented in the accompanying illustration. This advanced recorder is furnished in an attractive square Duralumin case with chromium plated hinges and hasp. It is equipped with floating coil clamp, which it is said increases its accuracy by eliminating friction and lost motion. These instruments may be equipped with the distinctive new Over-Heat Protector, a safety feature which definitely protects the thermal element if temperatures exceed the instrument range. It is claimed with this new protector, that excess temperatures of 500 degrees F. over the maximum chart range will cause no damage.



Recorders with multiple pens for recording several different temperatures can be furnished if desired. All parts are standardized and are interchangeable with other Mason-Neilan temperature control instruments. An illustrated folder describing these Recording Thermometers is just off the press and will be sent upon request by Mason-Neilan Regulator Company, 1190 Adams street, Boston.

Changes by Swedish Paper Machinery Firm

The board of directors of Aktb. Karlstads Mekaniska Verkstad, Karlstad (and Kristinehamn), a large manufacturer of paper and pulp machinery, rotary drying furnaces, water turbines and automatic governors, weirs, tubes, etc., plans to transfer the sales, drawing, calculating and allied departments of the company from Kristinehamn to Karlstad, according to Basil D. Dahl, American Trade Commissioner of Stockholm, Sweden. This concern was established in 1860 and is capitalized at 3,600,000 crowns. The total output in 1932 was valued at about 8,000,000 crowns. It is felt that the proposed change will increase the competitive strength of the company, bring about more unity in administration, and reduce overhead considerably. The personnel will be transferred from Kristinehamn to Karlstad October 1, 1934.

The turbine testing laboratory, as well as a small accounting office, foremen, and workshop and office personnel will remain in Kristinehamn.

In connection with the changes contemplated, the Board of Directors has made Mr. Gunnar Brolin, the chief engineer of the Karlstad plant, Vice President of the company.

Byproduct Power in a Board Mill*

By S. D. Reynolds[1]

At present, the cost of producing power as a byproduct in industries where large quantities of process steam are used is so low that no central station can compete unless other factors have great weight. This is chiefly due to the very rapid increase in practical steam pressures in the past few years.

In the case of the central station, this increase in pressure, combined with other improvements has reduced the fuel consumption per unit of output about 50 per cent. However, when all other expenses incurred up to the point of delivery to the consumer are added, this reduction in cost due to improved fuel economy has reduced consumer's cost only about 15 per cent. This is due to the enormous costs of the utility system above those that can be charged solely to generation and which are not reduced by the improved fuel consumption figures.

The situation in the industrial plant in which there is a large demand for process steam is very different. Here a certain investment and operating expenses are required for steam production regardless of whether byproduct power is made or not. The present day development of bleeder and back pressure turbines in small sizes and capable of taking advantage of the higher boiler pressures, has made it possible to produce large quantities of byproduct power with reasonable increment investment and operating costs. The increased thermal cost of the byproduct power is low since it would only be 3,413 B.t.u. per kw.-hr. except for turbine and generator efficiencies. Taking into consideration all corrections, it should not be more than 5,000 B.t.u. per kw.-hr. This is less than half of the best central plant B.t.u. consumption. Even using the mercury vapor-steam cycle will not bring the central station fuel consumption down to 5,000 B.t.u. per kw.-hr.

Improvement Factors

Other factors that have helped the industrial plant power generation situation are (1) the improvements in boiler and turbine design that have reduced maintenance and outages, (2) the improvement in the science of feed water treatment, (3) the development of pulverized fuel and stoker equipment that permits a wider choice in coals, (4) improvements in instruments and automatic control apparatus that makes it possible for the small plant to maintain high efficiencies without an elaborate control and testing organization, (5) the improvements in bleeder and speed control mechanisms that permit the turbine to function satisfactorily over a wide range of load conditions, (6) the increase in size of individual units has tended towards more efficient units (an example is the water rates of 500 kw. and 3,000 kw. turbo-generator with initial conditions of 400 pounds and 700 degrees total temperature and a back pressure 50 pounds are respectively 36 and 27) and (7) the availability of trained power plant men at present. This is partly due to the reduction in forces of the utilities that has resulted from consolidations.

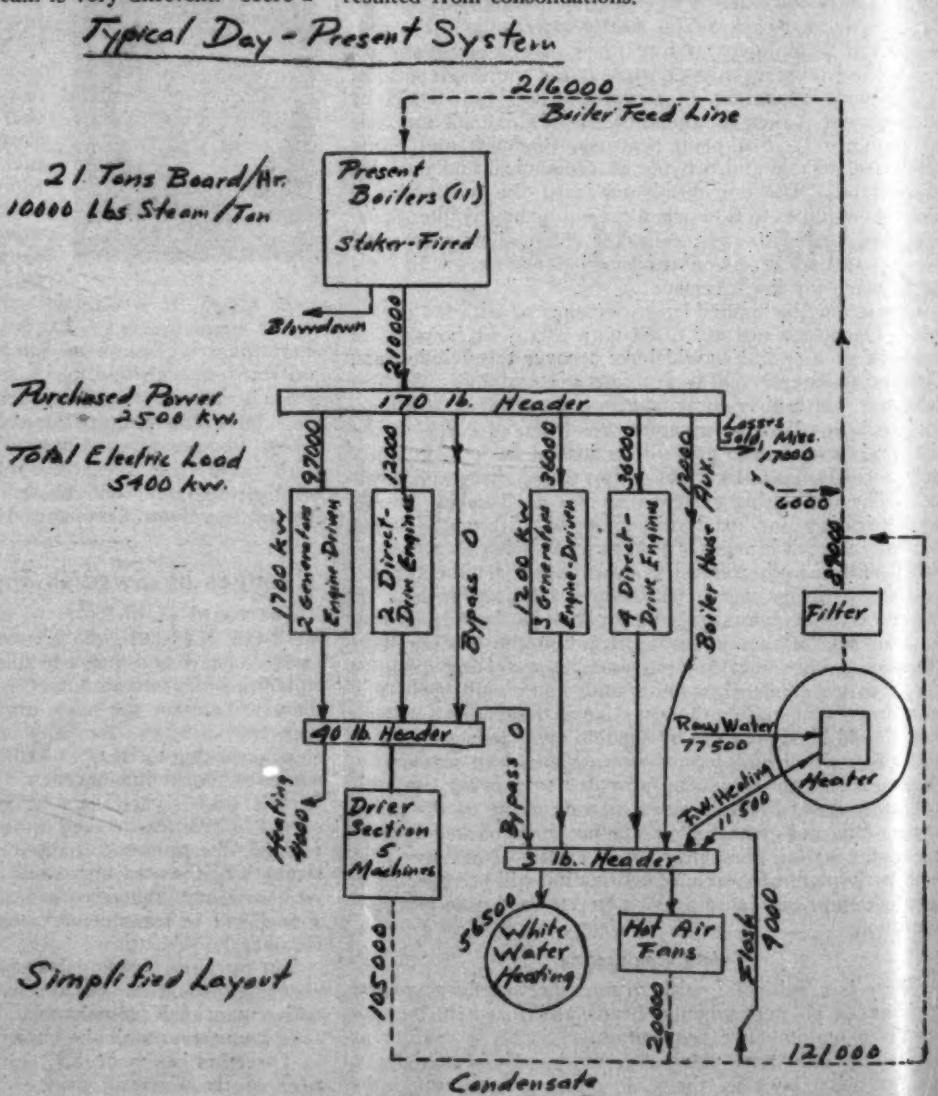


FIG. 1.

* Presented at a meeting of the Delaware Valley Section of the Technical Association of the Pulp and Paper Industry, Philadelphia, Pa., April 27, 1934.

[1] Member TAPPI, power engineer, Container Corporation of America, Manayunk, Pa.

The most economical design for a byproduct power plant can be made where the demands for steam and power are constant or coincident. Under these conditions it would be possible to operate without bypasses, condensers or purchased power tie-in. This condition is probably never met.

Paper mills approach the above ideal condition and are in a very favorable position for production of byproduct power. The amount of power required usually does not require any extremely high inital steam pressure on account of the comparatively low process pressures and large quantities of steam required for drying, beater water heating and air and building heating.

Steam Plant Expansion Program

The mill with which the writer is connected is in the midst of a power plant expansion program in which a high pressure plant is being superimposed on the existing plant. Since the writer is most familiar with the conditions in this mill, and also since its operation is typical, he asks your permission to discuss its power situation in particular.

This mill produces approximately 500 tons per day of liner board, chip, news and manilas on 5 machines. 40-pound steam is used for drying, all other uses except some small amount of live steam for felt conditioners is at 3 pounds.

The steam used per ton averages about 10,000 pounds over the year, dropping as low as 9,000 pounds per ton during the warm summer months and reaching 11,500 pounds per ton during the very cold winter months. The use of 40 pound steam for drying remains practically constant throughout the year and is about 5,000 pounds per ton. The variable part of the steam use is in the heating load for beater water, building and hot air heating. The variation in beater water heating requirements is due chiefly to the change in makeup water temperature from the canal and radiation losses. The steam use per ton at any one time of the year varies somewhat with the kind of board being made but not widely.

The power requirements vary from 200 kw.-hr. per ton to 325 kw.-hr. per ton, depending on the per cent liner board being made. Liner board can be made on any or all of four of the paper machines but not on the fifth and largest machine. For this reason, the maximum per cent liner with full mill production is 68. The power requirements for varying percentages of liner can be approximated by the following formula. (Kw.-hr. per ton = 200 + per cent liner × 200).

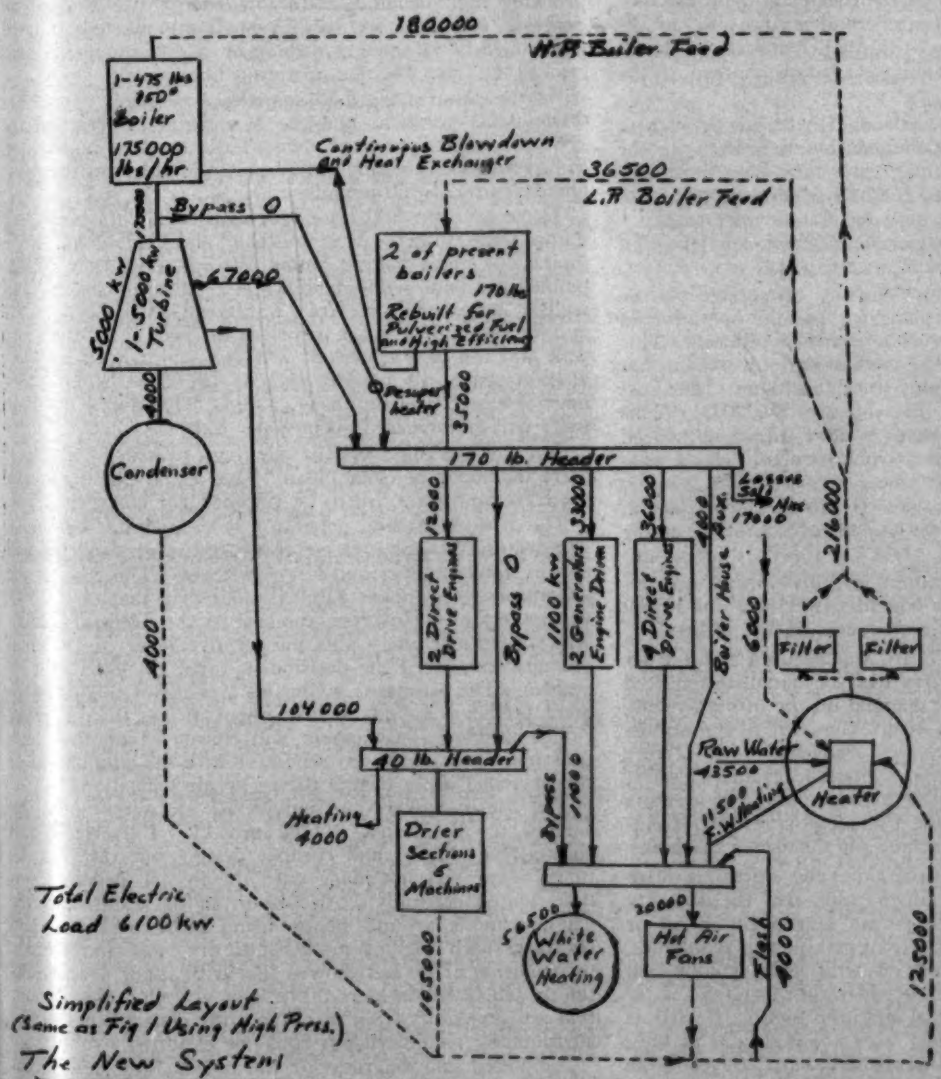


FIG. 2

The initial steam pressure is 170 pounds gauge. All prime movers are Corliss engines except 2 small boiler feed turbines and one paper machine drive turbine. Four engines exhaust to the 40-pound line and the other prime movers exhaust to the 3-pound line. Power is generated up to the point where the 40-pound and 3-pound steam requirements are satisfied and the balance of the power is purchased from Philadelphia Electric Company. At present the load on the Philadelphia Electric varies from an average of 2,500 kw. on a high power use day to 200 kw. on non-operating days. The mill generators operate in parallel with the utility system.

Manufactured or Purchased Power

This mill was originally designed for chips and folding grades and the power plant ran isolated. With the growth of the liner board business, the increased power load made necessary either further generation or the use of some purchased power. Increased generation was considered impossible and a purchased power tie-in was made to handle certain load circuits. This power was purchased at 13,200 volts and trans-

formed to 440 volts. At this time, the utility service was not parallelled with the mill generators or the mill generators with each other, each power source handling its own particular load circuits. Due to this arrangement, many bad operating conditions occurred. Under some operating schedules, the mill generators were underloaded, the purchased power load high with large quantities of live steam being bypassed through a reducing valve from boiler pressure to the process lines. The opposite condition would also occur. The mill generators would be overloaded with their engines exhausting steam above that required to satisfy the process demand, making it necessary to relieve steam to the atmosphere. At the same time, the purchased power would be low. This resulted in high demand charges and low load factors on the purchased power service with resultant high bought power rates per kw.-hr. An attempt was made to remedy this condition by the use of double throw switches that would permit the transfer of one or more loads from the purchase power service to the mill generators as required by the heat balance. This was effective to some extent, but was objectionable for several reasons. To obtain a close balance, a multiplicity of transfer circuits would be required. This was impractical and expensive. The circuits used for transfer purposes carried beater and jordan motors. Shutting down the beaters and jordans to do the switching was objectionable to the paper makers in that it caused some delay and often a variation in test of the board being made.

About two years ago, it was found that aside from heat balance economies, due to the continued growth of the mill power load on account of greater liner board tonnage, it would be necessary to load the mill generators to capacity to avoid the installation of more transformer capacity. This was found possible by parallel operation of the mill generators with each other and with the utility.

The Philadelphia Electric Company cooperated to the fullest extent in preparing plans for parallel operation in spite of the fact that their revenue would be reduced. This is in line with their policy of favoring the power plan that tends towards greatest economy to the customer. The cost of labor and material for this job was $9,000.00. This included necessary cable changes and additions, speed changers on engine governors, synchroscopes, remote controlled oil switches, reverse power relays and a tripping system that would unload certain circuits in case of failure of any supply to prevent overloading of the other power sources.

In the first year of operation, the investment was returned by a reduction in the bought power rate due to the ability to maintain a higher load factor on the utility.

The steam use per ton of board was reduced about 5 per cent due to the ability to carry load beyond that required to balance the process steam demand on the utility system, where previously steam had been exhausted to the atmosphere with the purchased power load very low. Other advantages of this system that cannot be evaluated easily were, maintenance of constant speeds due to our generators being held at 60 cycles by the Philadelphia Electric Company; and reduction of lost time on the paper machines.

It has been recognized by the Company since the introduction of purchased power in the mill, that the use of a higher boiler pressure would permit generation of all or practically all of the power with great power economies. The existing boilers are low set with small combustion space and are equipped with an old style of stoker. Low boiler efficiencies are obtained and the choice of coal is very limited. Operating labor costs are high and maintenance is excessive, due to the age and hard usage of the boilers.

In view of the excessive costs and physical conditions of the present boilers, together with the attractive savings that can be expected with high pressure modern boilers, and increased byproduct generation, the Company has started work on a power plant that will ultimately result in a completely isolated power plant at 475 pounds boiler pressure.

One boiler of 175,000 pounds per hour capacity at 475 pounds 150 degrees superheat is to be installed at present. A double extracting condensing turbine generator is to be installed. Extraction pressures will be 170 pounds, to supply steam at the pressure used by existing prime movers, and 40 pounds for dryer steam use. The condenser will be of the surface type and operate at 28 inches vacuum. It will be used to take only the sudden swings that occur when a dryer break or some similar steam disturbance occurs. The possibility of making steam at a sufficiently higher pressure that would allow the manufacture of all power with enough steam through bypass to take care of all steam demand variations was considered but the cost was found excessive. The use of a single turbine, extracting at 170 pounds and exhausting at 40 pounds, taking the electrical swings on the utility was considered, but the probable high demands with low energy use showed an excessive bought power rate. A small amount of purchased power will be retained as a relay in case of outage of generators and also for non-operating time power.

As the plant steam load sometimes averages over 230,000 pounds per hour and the new boiler is designed for 175,000 pounds per hour, two of the existing boilers are to be remodeled to supply the balance of steam at the present pressure of 170 pounds.

These are two 800 h.p. Badenhausen boilers with rear dump Jones stoker. Due to stoker and combustion space limitations, these boilers cannot average more than 37,000 pounds per hour without high maintenance of stokers and walls. Rear, side and front water walls will be installed and the combustion space increased by arching out the front wall and use of the present windbox and ash pit as combustion space. A normal capacity of 65,000 pounds per hour is expected after these changes. Efficiency of these units will be increased about 8 per cent.

One low pressure and the new high pressure boiler will carry the maximum steam load. Five of the existing stoker fired Heine boilers are to be retained for emergency use.

The new 5,000 kw. generator is to operate 480 volts. The use of this low voltage for such a high capacity will require heavy copper and large switches. The cost of the generator is also about $10,000 more than that of a 2300-volt generator. However, the cost of the necessary 2300-480 volt transformers plus the inconvenience of two mill voltages influenced the decision in favor of 480 volt generation. The estimated savings as a result of this development predict a payoff on investment in less than 5 years.

The ultimate development will consist of another high pressure boiler and turbo-generator with the elimination of the present Corliss engine drives by electrification.

The use of stokers and pulverized fuel were both considered in the design of the project. Pulverized fuel showed the simpler and cheaper design, but the decision in its favor was not made until the fly ash problem was investigated carefully. An inspection of plants and the neighborhoods around plants using pulverized fuel and equipped with various methods of dry, wet and electric precipitation of fly ash showed that with vapor precautions the fly ash from stacks could be kept to such a low amount that no complaints from manufacturing departments or the surrounding neighborhoods could be expected.

Simplified line diagrams of the present and new steam plant layouts are shown in Figs. 1 and 2.

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Machinery

Screen Device for Paper Stock or Pulp in a Suspension of Water. Wesel Waal, Oslo. Nor. pat. 52,661. —J.F.O.

Ring-shaped Screen for Pulp Digesters with Circulation Cooking Systems. S. Brobeck, Gavle. Swed. pat. 78,170 (Feb. 6, 1931).—J.F.O.

Device for the Screening of Stock Suspended in Liquids. Firma J. M. Voith, Heidenheim. Ger. pat. 587,011 (Oct. 27, 1931).—J.F.O.

Process for Loosening Solid Deposits on Surfaces Heated by Steam in Pulp Digesters and Similar Apparatus. E. Morterud, Oslo. Swed. pat. 78,285 (March 14, 1931).—The steam is cut off for short periods during the heating, whereby the deposits are loosened by the waste liquor streaming b.—J.F.O.

Suction Device for the Vapors and the Feed Device for the Warm Air to the Dryers for Paper Machines. Rudolf Steinmetz, Steyrermuhl, Austria. Ger. pat. 588,546 (Dec. 13, 1931). The heat from the vapors leaving passes through a specially designed heat interchange and there warms the air going to the dryers.—J.F.O.

Support for Pipe Lines and Fittings in Pulp Digesters. Manuela Frohberg, Dresden. Ger. pat. 588,920 (June 30, 1931).—J.F.O.

Thickening Device for the Back-Water from Pulp Grinders. J. Haug, Oslo. Nor. pat. 52,854 (Jan. 7, 1929). —The device consists of a container in which the back water flows upward, the fibers being drawn off through an overflow, the water passing through a filter at the top and the thickened material is drawn off at the conical base.—J.F.O.

Process and Device for the Manufacture of Objects from Fiberous Stock. Cellulose Stoepning A.S., Oslo. Nor. pat. 52,879.—The manufacture takes place in forms with perforated walls with the simultaneous addition of warm air under pressure. The stock should have a Schopper Riegler of at least 45°.—J.F.O.

Permeable Textile Weave for Filter Cloths, Dryer Felts for Paper Machines, and Similar Apparatus. E. von Asten, Eupen, Belgium. Nor. pat. 52,887 (Dec. 3, 1930).—J.F.O.

Horizontal Centrifugal Screen with Axial Inlet for the Stock and Dilution Water. Andreas Biffar, Miltenberg a.M. Ger. pat. 588,116 (Sept. 6, 1931).—J.F.O.

Device for the Removal of Water from Wet Bark and Similar Materials by Means of Pressure. R. Wilen, Helsingfors. Finn. pat. 15,277 (Dec. 1; 1931).—The device consists of a perforated box or tube in which a plunger operates by means of hydraulic pressure.—J.F.O.

Cutting Machine for Straw. Y. J. Rautakallio, Vammala. Finn. pat. 15,302 (April 26, 1932).—J.F.O.

Arrangement for the Strainers for Pulp Digesters and Similar Apparatus. A. Bol. Nordiska Armaturfabrikerna, Stockholm. Finn. pat. 15,314 (Oct. 17, 1931).—J.F.O.

Heat Recovery Device Used as a Feed Water Pre-Heater or Boiler in Conjunction with the Smelting Oven in the Manufacture of Sulphate Pulp. E. J. Janhunen, Valkeakoski. Finn. pat. 15,315 (Jan. 4, 1932).—The device operates as a reverberatory oven through which the combustion gases from the smelting oven pass to the rotating oven.—J.F.O.

Ventilation Arrangement for Drying Devices. A. Bol. Svenska Flaktfabriken, Stockholm. Finn. pat. 15,333 (March 11, 1932).—J.F.O.

Device for the Removal of Coarser Knots from Pulp and Similar Materials. C. A. Johansen, Mjoendalen. Nor. pat. 52,830 (March 2, 1932).—J.F.O.

Device for Carrying Away the Water from Paper Drying Cylinders. H. Holt, Lancaster, England. Nor. pat. 52,831 (Oct. 20,1932).—J.F.O.

Horizontal Centrifugal Screen for Ground Wood, Pulp and Similar Materials. Firma J. M. Voith, Heidenheim. Ger. pat. 587,882 (Sept. 22, 1931).—J.F.O.

Device for the Regulation of the Speed of the Individual Motors in Electrical Multiple Motor Drives. Siemens Schuckertwerke, Akt. Ges., Berlin. Ger. pat. 587,-980 (Feb. 11, 1928).—J.F.O.

Device for the Screening of Pulp and Similar Materials by Means of a Centrifugal Action which Throws the Stock Against a Screen. Aleksander Lampen, Imatra, Finland. Ger. pat. 587,088 (April 6, 1932).—J.F.O.

Device for Rotating Screen Drums for Wood Chips and Similar Materials, Operating Without Impact. J. O. Marland, Kalrstad. Swed. pat. 78,355 (March 27, 1930).—J.F.O.

Method for Leading Away the Water Formed from the Web of Paper at the Couch or Press Rolls of a Paper Machine. J. D. Ullgren, Stocksund. Swed. pat. 78,356 (April 4, 1930).—The water formed is blown toward one or both sides and in such a manner that it does not foam or divide.—J.F.O.

The Construction of a Modern Carton Machine. Karl Zeitsch. Wochbl. Papierfabr. 64, No. 27: 474-76 (July 8, 1933).—A description of a carton machine which was built and put in operation in 1932, together with several illustrations. The wet end is a combination of two fourdrinier machines with a cylinder machine, thus making a board of several layers and making use of the desirable features of each type of machine. The dryers and also the preparation of the stock are described.—J.F.O.

The Constant Transmission Drive for the Variable Paper Machine. Wilhelm Volle. Wochbl. Papierfabr. 64, No. 28: 496-98 (July 15, 1933).—The author first discusses the draw throughout the paper machine and stresses the importance of the correct changes in speed for the various units. A transmission designed by the author is described in full, including a specially designed cone pulley for a link belt which operates positively without slippage and with any speed changes desired.—J.F.O.

Concerning the Influence of the Position of the Center of Pendulation of the Press Rolls on the Quality of the Paper Web. K. Boll. Wochbl Papierfabr. 64, No. 30: 529-31 (July 29, 1933).—A theoretical discussion of the mechanics of the press roll and its proper design and

construction for the purpose for which it is to be used.—J.F.O.

"Siemensit," a new fire-proof Material. Wochbl. Papierfabr. 64, No. 33: 582 (Aug. 19, 1933).—A new fire-proof material containing 20 to 40 per cent chromium oxide, 18 to 30 per cent magnesium oxide, 25 to 40 per cent clay and 8 to 14 per cent residual constituents, has been found very satisfactory for smelting ovens and similar apparatus where high temperatures and a sticky slag occurs.—J.F.O.

The Moistening of the Paper at the Calenders. Merkur. Wochbl. Papierfabr. 64, No. 34: 594 (Aug. 26, 1933).—A practical consideration of the methods and problems of moistening paper at the calenders.—J.F.O.

Power House

Steam and Power in the Pulp and Paper Industry. Walter P. Gavit. Paper Trade J. 98, No. 5: 36-40 (Feb. 1, 1934).—An outline of some of the ways for increasing the economy of production and utilization of steam and power in the pulp and paper industry.—A.P.-C.

Pressure-Temperature Trend in Industrial Power Plants. William E. Beach. Paper Ind. 15: 572-578 (Jan., 1934).—A discussion of present conditions, future tendencies and modernization possibilities.—A.P.-C.

Flat Belt Drives. Frank W. Parkhurst. Paper Trade J. 98, No. 5: 40-43 (Feb. 1, 1934).—A brief discussion dealing with selecting the proper size belt, effect of belt speed on necessary tension, and maintaining tension.—A.P.-C.

Switchgear Developments of Interest to the Pulp and Paper Industry. G. M. Reed. Paper Trade J. 98, No. 4: 40-46 (Jan. 25, 1934).—A review of modern trends and recent developments.—A.P.-C.

New Electrical Equipment for Paper Mills. H. W. Rogers. Paper Ind. 15: 579-580 (Jan., 1934).—A brief description of improvements in electrical paper mill equipment which have been made during 1933.—A.P.-C.

Modern Lighting Practice in Paper Mills. W. S. Hadaway. Paper Trade J. 98, No. 6: 40-43 (Feb. 8, 1934).—A report of the most advanced ideas regarding the ways in which the best lighting intensities can be obtained in paper mills and industrial offices.—A.P.-C.

Lubrication in the Paper Industry. Jean Defrance. Papeterie 55: 18-28, 129-137, 240-248, 347-355, 462-469, 577-588, 786-793, 898-905, 1006-1010, 1125-1130 (1933); 56: 14-18 (1934).—A detailed discussion of the importance of proper lubrication in the paper mill and of the types of lubricants best suited for various services.—A.P.-C.

Gear Lubrication in Paper Mills. Socony-Vacuum Corp. Paper Ind. 15: 564,567 (Jan., 1934).—A brief general discussion.—A.P.-C.

Recent Regulator for Steam Engines Used for the Drive of Paper Machines. Franz Merz. Wochbl Papierfabr. 64, No. 31: 545-49 (August 5, 1933).—A new method for the regulation of the drive for paper machines is described, which acts indirectly upon a sensitive hydraulic regulator. This regulator is applicable to constant drives and variable speed drives.—J.F.O.

Mills

The Sulphite Pulp Mills. Anon. Pulp Paper Can. 34: 767-774 (Dec., 1933).—A description of the 330-ton, rayon grade, bleached sulphite pulp mill of Canadian International Paper Co., at Kipawa, Que.—A.P.-C.

The World's Largest Newsprint Mill. I. H. Copeland. Pulp Paper Can. 34: 709-722, 806 (Dec., 1933).—A description of the 786-ton mill of Canadian International Paper Co., at Three-Rivers, Que.—A.P.-C.

The Gatineau Mill. G. J. Lane. Pulp Paper Can. 34: 723-735 (Dec., 1933).—A description of the 789-ton newsprint mill of Canadian International Paper Co. at Gatineau, Que.—A.P.-C.

Where Ten-Test Building Board is Made. Charles Southgate. Pulp Paper Can. 34: 736-739, 804 (Dec., 1933).—A brief description of International Fibre Board Co.'s mill at Gatineau, Que., practically forming a complement of the Gatineau newsprint mill.—A.P.-C.

The Dalhousie Mill. L. S. Henry. Pulp Paper Can. 34: 741-750, 802 (Dec., 1933).—A description of the 4-machine newsprint mill of Canadian International Paper Co., at Dalhousie, N. B.—A.P.-C.

The Mill at Corner Brook, Newfoundland. K. O. Elderkin. Pulp Paper Can. 34: 751-766, 796, 798 (Dec., 1933).—A description of the 4-machine 600-ton newsprint mill of Canadian International Paper Co., at Corner Brook, Newfoundland.—A.P.-C.

Miscellaneous

Paper Mill Slime and its Prevention. B. Monnberg. Finnish Paper and Timber J. 14, No. 24: 900-902, 904,906 (Dec. 31, 1933).—The author describes slime troubles experienced in the Woikka mill of Finland which were successfully controlled by the application of the chloramine method. A number of references to American researches on this subject are given.—C.J.W.

Notes on the Purity and Permanence of Wood Fibers. Charles A. Blaisdell and Jessie E. Minor. Paper Ind. 15: 512-514 (Dec., 1933).—The permanence properties of a very white facial tissue made of highly-bleached sulphite wood fiber and of a cream-colored towelling made of underbleached sulphite wood fiber were investigated by determining copper number and absorbence before and after subjecting to oven aging or to light aging. Results showed that high purification of fiber does not necessarily imply high permanence.—A.P.-C.

Standardization of Materials Purchasing Specifications. A. E. H. Fair. Paper Trade J. 98, No. 6: 43-44 (Feb. 8, 1934).—A general outline of the progress made and desired relative to establishing specifications for such materials as wood, pulp, alum, sizes, felts, wires, coal and lubricants.—A.P.-C.

Cellulose, Lignin and Paper Making Studies. Louis E. Wise. Paper Ind. 15: 509-511 (Dec., 1933); 568-571 (Jan., 1934).—A review of recent researches in this field of chemistry by German investigators, with bibliography of 90 references.—A.P.-C.

How Management May Use the New Vocational Training Bulletin. Harold G. Noyes. Paper Trade J. 98, No. 6: 45-46 (Feb. 8, 1934).—Suggested methods and procedures to be followed in using the recent publication of the Education Committee of TAPPI in operating training programs in the pulp and paper industry.—A.P.-C.

Extent of the Usefulness of a Paper Mill Laboratory. V. P. Papier 36: 1101-1105 (Dec., 1933).—A brief discussion.—A.P.-C.

The Economic Significance of Paper Specifications. Joseph E. Plumstead. Paper Trade J. 98, No. 5: 43-44 (Feb. 1, 1934).—A brief review of the respective attitudes of paper makers and paper buyers regarding paper specifications.—A.P.-C.

pH Determination and the Problem of Waste Waters. M. Déribéré. Papetrie 55: 1050-1055, 1110-1117, 1174-1178 (Oct. 25, Nov. 10, 25, 1933).—After a brief discussion of the value of pH determinations in controlling the biological purification of waste waters, the principle of the

electrometric determination of pH is explained and instruments constructed by F. & M. Lautenschläger, Munich, for the continuous electrometric and colorimetric determination of pH are described.—A.P.-C.

United States Patents on Paper Making. Fourth Quarter, 1933. Clarence J. West. Paper Trade J. 98, No. 2: 33-36 (Jan. 11, 1934).—A list in numerical sequence of patents relating to pulp and paper making issued during Oct., Nov. and Dec., 1933.—A.P.-C.

Co-Ordination of Technical Control, Research and Development with Practical Mill Operation. K. A. Taylor. Paper Trade J. 98, No. 4: 33-36 (Jan. 25, 1934). —An address outlining the main types of work done by a well-organized technical organization.—A.P.-C.

The Critical Freight Zone in the Shipping of Pulp with Varying Tariff Reductions for Moist Pulp. Wilhelm Schuller. Wochbl. Papier fabr. 64, No. 48: 845-48 (Dec. 2, 1933).—The author derives several formulæ which should be used in calculating the most economical conditions for shipping wet pulp.—J.F.O.

"Slow and Free." N. Wunderlich. Papierfabr. 31, No. 22: 321-324; No. 24: 345-47 (May 28, June 11, 1933). —A general discussion of the nature of fibers classified as long, short, greasy, de-watering property, swelling, hydration, and fibrillation. Ground wood fibers and the testing of the degree of beating are also discussed, together with a bibliography of other investigators.—J.F.O.

Preparation of a Graph for the Calculation of the Paper Production, for Use by the Machine Tender. W. Kirbach. Wochbl. Papierfabr. 64, No. 22: 378-79 (June 3, 1933).—The author explains the preparation of the graph and how it is used.—J.F.O.

Static Electricity in Paper and its Prevention or Amelioration. Wochbl. Papierfabr. 64, No. 30; 532 (July 29, 1933).—A summary of the causes of static electricity in paper and ways to remove it. Over-drying at the dryers is the chief cause for static and paper to be supered should be so dried that no addidtional moistening is necessary.—J.F.O.

Investigation Over the Influence of the Color of the Packing Means on Perishable Wares. M. R. Coe. Wochbl. Papierfabr. 64, No. 31: 549 (Aug. 5, 1933).—It has been found that certain perishable wares keep best in wrappings which are colored green or black. This and other important facts are discussed together with the methods used in the investigation.—J.F.O.

The Resistance to Chemicals of the Most Important Domestic Species of Wood. Edgar Morath. Wochbl. Papierfabr. 64, No. 42: 743-45 (Oct. 21, 1933).—By means of curves and other data the author shows the resistance of the principal kinds of wood to ordinary chemicals. A thorough bibliography is included.—J.F.O.

The Trade Mark. W. Wolf. Wochbl. Papierfabr. 64, No. 44: 772-73 (Nov. 4, 1933).—A general discussion of the trade mark in Germany.—J.F.O.

A New Process for the Recovery of Pulp. Wochbl. Papierfabr. 64, No. 32: 562-63 (Aug. 12, 1933).—A description of the process for the recovery of pulp according to German patent 581,806 invented by Wedekind and Engel, during their investigation of lignin. Although the solvent for the lignin, namely dioxan, a cyclic diether, contains no chemically reactive groups, it will put all the lignin in a colloidal solution if the wood is cooked with it for several hours at 90°C. It is not necessary to use chemically-pure dioxan, and furthermore, dioxan is an excellent solvent for rosin, fats and waxes. A catalyzer aids in the cooking of the wood, and several examples of different cooks are given.—J.F.O.

Process for the Protection of Felled Trees Whose Logs Have Not Been Barked. I. G. Farbenindustrie A.G., Frankfurt a.M. Swed. pat. 78,466 (Sept. 3, 1930). —A liquid is used for the protective coating, made by treating tar, tar distillate and similar viscose oils with chlorine or chlorine organic compounds.—J.F.O.

Glass Wool. H. Reich. Wochbl. Papierfabr. 64, No. 49: 886-87 (Dec. 9, 1933).—The properties and advantages over other materials which are used for insulation and noise-dampening purposes.—J.F.O.

The "46th" General Meeting of the Society of German Chemists in Wurzburg. Papierfabr. 31, No. 26; 369-72 (June 25, 1933).—The following papers were read, "Concerning the Homogenity of Natural Celluloses," "Acetyl Cellulose from Hydrated Fibers," "The Hydrolysis of Wood for Obtaining Carbohydrates and Cattle-Feed Rich in Proteins," "Saccharafication of Wood According to the Wood Hydrolysis Process," and "The Scholler-Tornesch Process for the Saccharafication of Wood."—J.F.O.

Annual Meeting of the "Vereins der Zellstoff und Papier Chemiker und Ingenieure" Berlin, December 7 to 9, 1933. Wochbl. Papierfabr. 64, No. 50; 899-904 (Dec. 16, 1933).—A resume of the minutes and the papers read at the annual meeting of the German pulp and paper association. The following papers were presented, "Heat Technology in the Sulphate Industry," "Progress and Improvements in the Sphere of Electrical Drives in the Pulp and Paper Industry," "The Colloidal Chemical Properties of Spruce Woods," "The German Standard Method for the Testing of Pulps," "The Evolution of the Benson Boiler With Special Reference to Its Use in the Pulp and Paper Industry," "The Analysis of Swelling by Means of a Projecting Camera." A short review of events occurring during the past year throughout the association was given. —J.F.O.

The "28" Anniversary Celebration of the Academy of the Society of Paper Engineers, Darmstadt. Kirchner. Wochbl. Papierfabr. 64, No. 23: 397-99 (June 10, 1933).—The following papers were read and discussed, "The Beating Action in the Beater and in the Jokro mill," in which it was proved that for the same degree of beating the stock from the Jokro mill is shorter than stock from the ordinary beater; "New Instruments for the Testing of Paper," in which a new tear tester is discussed which does not have the disadvantage of the Elmendorf in that various numbers of sheets are torn together; "Steam Permeability of Papers," and "The Suitability of the Pan Centrifuge for Making Quick Determinations of the Consistency of Stock."—J.F.O.

The Packing of Materials for Shipping. Huber. Wochbl. Papierfabr. 64, No. 23: 399-400 (June 10, 1933). —Description of some of the devices for packing and shipping paper, in rolls, skids, etc.—J.F.O.

The South West German Section of the Society of the Pulp and Paper Chemists and Engineers Meeting at Darmstadt, November 8, 1933. Wochbl. Papierfabr. 64, No. 47: 826-27 (Nov. 25, 1933).—The following papers were read and discussed, "The Action of Varying Sulphur Dioxide Concentration and Cooking Time on the Properties of the Pulp"; "Contribution to the Knowledge of the Chemical and Physical Properties of Pulp," and "Influence of the Press Conditions on the Sheet Strength." —J.F.O.

Austrian Section of the Society of the Pulp and Paper Chemists and Engineers Meeting in Vienna, November 11, 1933. Wochbl. Papierfabr. 64, No. 47: 827-28 (Nov. 25, 1933).—The following papers were read andd iscussed, "Recent Investigations Over the Structure of High Molecular Compounds, Especially That of Cellulose and Its Importance to the Paper Industry"; "Accident Pre-

vention in the Manufacture of Sulphite Pulp," and "Boiler Troubles and the Use of Tri and Disodium Phosphate."—J.F.O.

Cellulose and Lignin

New Light on the Structure and Properties of Cellulose. James Strachan. Paper Maker & Brit. Paper Trade J. 86: TS1-2 (Nov. 1, 1933).—A brief review of some very recent work which confirms statements made by Strachan as far back as 1922.—A. P.-C.

The Sorption of Water by Cellulose. S. E. Sheppard and P. T. Newsome. Ind. Eng. Chem. 26: 285-290 (March, 1934).—Sorption of water by cellulose is an index of the fine structure of the gel. Sorption of water vapor is determined by two phases continuous with each other: (1) primary surface or chemosorption, dependent on the free hydroxyls; (2) volume sorption, or capillary condensation. Mercerization and "regeneration" give a cellulose with a coarser lattice and higher water absorption at all vapor pressures. Degrading treatments (acid tendering, oxidation) do not materially change the water adsorption. Sorption of water vapor is unaffected by beating (hydration).—A. P.-C.

Recent Advances in the Knowledge of Cellulose and Fiber Structure, and Their Relation to the Beating Process. Leslie G. Cottrall. World's Paper Trade Rev. 100: 1216, 1218, 1256-1261, 1295-1298, 1336-1344, 1375-1380, 1420, 1422, 1463-1468, 1502, 1504, 1546, 1584-1590 (Oct. 20-Nov. 17, 1933); Paper Maker & Brit. Paper Trade J. 86: TS8-16; TS25-30 (Nov. 1-Dec. 1, 1933).—A review of modern concepts of the mechanical and chemical structure of cellulose fibers, and of the manner in which they can explain the effects produced by the beating process, both in the stock and in the paper produced therefrom. The author puts forth a theory which is essentially the same as that of W. Boyd Campbell, differing from the latter only in minor details.—A. P.-C.

Recent Developments in Fiber Research. K. Hess. Melliand Textilber. 15, No. 1:29-32; No. 2: 65-68 (1934).—The author outlines recent developments regarding structure and reactions of fibers as determined by three methods, namely, the use of x-ray diagrams, the isolation of pure products and the use of motion pictures.—C. J. W.

Constitution of Cellulose. H. Staudinger. Chem.-Ztg. 58, No. 14: 145-148 (Feb. 17, 1934).—Staudinger reviews the latest conceptions of the constitution of cellulose. He emphasizes the technical and theoretical importance of the constitution, molecular weight and the physical and chemical properties depending on these. Cellulose differs radically from the lower ploysaccharides, especially in physical properties which are a function of the molecular weight or chain length just as in the homologous paraffin series. Ordinary methods fail for molecular weight determinations for cellulose but the change in the viscosity of solutions of cellulose gives a very good measure. Conclusions derived from cuprammonium solution viscosities are given, along with a discussion of the chain form which loses its stability to a large extent when the individual molecules are dispersed in the solution. The author considers the micelle theory of Meyer and Mark and their collaborators as being based on false interpretations of x-ray evidence.—C. J. W.

Adsorption and Swelling of Cellulose in Electrolytes of Varying Concentrations. K. Kanamaru. Kolloid-Z, 66, No. 2: 163-175 (Feb., 1934).—A discussion of swelling and adsorption of cellulose in hydrochloric acid, sulphuric acid, sodium hydroxide, aluminum chloride and potassium chloride is given. In acid solution the pH rises after cellulose is added and in alkaline solution it diminishes. The swelling of cellulose resembles that of proteins in having a maximum value on both the alkaline and the acid ranges of pH but it differs in that the minimum swelling point is not an isoelectric point. This point of minimum swelling at which the surface charge does not reverse is called the "hylotrop-adsorption" point. This point is at different pH values of the solution depending on the pretreatment of the cellulose. Only with aluminum chloride was a true isoelectric point found. A definite relation was found in the solutions between swelling and the zeta potential, the values going through a maximum. In swelling tests with varying ratios of solid material to amount of liquid, it was found that Ostwald's solid phase effect did not come into play at the hylotropic point; but it was in evidence elsewhere.—C. J. W.

Concerning the Question of the Homogenity of Natural and Regenerated Celluloses. W. Weltzien. Papier-Fabr. 31, No. 31: 419-20 (July 30, 1933).—Many valuable facts are given concerning the homogenity of cellulose and the article may well be considered as a refernce work on this subject.—J. F. O.

Lignin Content of Cellulose Products. A. G. Norman and S. H. Jenkins. Nature 131: 729 (1933).—A pentose, on treatment with cold 72 per cent sulphuric acid and then boiling with dilute sulphuric acid, gave a quantity of material as resistant as lignin and determined as such by accepted methods. About 25 per cent of the apparent lignin content of cellulose from cereal straws is secondarily produced from the cellulosan fraction, but there is some true lignin or other equally acid-resistant material present. The determination of lignin by the 72 per cent sulphuric acid method should be critically examined.

Some Chemical Reactions of Maple and Spruce Lignin. E. E. Harris, E. C. Sherrard and R. L. Mitchell. J. Am. Chem. Soc. 56: 889-893 (April, 1934).—Lignin isolated by the cold sulphuric acid method was found to be produced quantitatively, to be free from carbohydrates, and to contain all of the methoxyl not accounted for in the carbohydrates of the wood. Hydrochloric acid lignin contained carbohydrates and had lost methoxyl groups. Cuprammonium lignin contained carbohydrates and was not quantitative. A study of the properties of sugar maple and white spruce lignin showed that lignins from hardwoods and from softwoods were not the same. Evidence is presented to show that lignin in the wood is combined with carbohydrates.—A. P.-C.

Preparation of Lignin, its Nitration and the Properties of the Products Obtained. W. M. Nyhof. Chem. Weekblad 31: 90-96 (1934).—The elementary analyses of lignins prepared according to various methods are compared. The agreement between the results would probably have been greater if the various authors had applied a uniform method of drying. The crystals of nitrolignin obtained by Kürschner could not be duplicated and are probably crystalline impurities. The elementary analyses of various nitration products from different authors compare favorably notwithstanding the variation in the materials and the methods.—C. J. W.

Constitution of Lignin. XVII. Tetraconiferyl aldehyde. Peter Klason. Berichte 67, No. 2: 302-303 (Feb. 7, 1934).—From the isolation of beta-naphthylamine salt of tetralignosulphonic acid, from the sulphitet cooking of spruce wood, the author deduces that the minimum possible molecular weight of lignin in wood is 3640. He also claims that the coniferyl aldehyde radicals are combined in the same type of chain as the simple sugars in the polysaccharides.—C. J. W.

New England Paper Box Men Meet

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 18, 1934.—The annual jamboree and outing of the New England Paper Box Manufacturers Association, the Metropolitan Paper Box Manufacturers Association and Supply Men was held at the Vesper Country Club, Tyngsboro, Mass., last Tuesday, with 118 present. Many played golf, with the first teeing off about 8.30 o'clock. Games for non-golfers began at 9.30. Playing of all sports continued throughout the day. Luncheon was served at the club house at 1 o'clock, and dinner at 6.30 o'clock.

Before the dinner Pietro and his two daughters played on the accordion, with many members gathering around to sing in some of the selections. There was music by the same entertainers during the dinner, ranging from the classic to popular and old-fashioned songs, all joining in the last two.

At the dinner President Harold S. Fuller, of the New England Paper Box Manufacturers Association, was toastmaster. Ernest Grenier, introduced by Mr. Fuller as the "dean of the supply men," spoke briefly. Lester Friend, chairman of the outing committee, spoke in regard to the work of the committee and A. C. Wiswall, president of the Metropolitan Paper Box Manufacturers Association, made a few remarks. Charles Shaw, president of the Carton Association, Providence, and vice-president of the New England Association, proposed having the outing at Providence next year. Arthur Shaw, from Meriden, spoke as a representative of Connecticut.

Howard Beckett, executive secretary of the Code Authority, spoke on the NRA.

The singing of "He's a Jolly Good Fellow" preceded the talk of Frank Lowthorp, assistant deputy and administrator in charge of Paper Codes, which includes paper boxes. Mr. Lowthorp was visibly moved by the compliment. He talked at some length, referring to the announcement in the newspapers in regard to price-fixing. He noted that Gen. Johnson said the other night that none of the Codes is affected in the slightest degree. If any changes are contemplated, they will only be made through a conference of the committee and representatives of the government. Three cheers were given Mr. Lowthorp at the close of his talk.

On account of the rain, the initiation of the Pheneagle Club was held in the dining room instead of out-of-doors, as was originally planned. The following candidates were initiated: C. I. Fowle, Louis Ingalls, Louis Neiman, Otto Schultz, Paul Poinier, Ed Abrahams, Louis Hill, Lloyd Claff and Ben Nigrosh.

Harold Wilkins, of the golf committee, awarded the prizes to the winners, expressing thanks to the Robert Gair Company for the donation of a silver cup for the best gross, inscribed Haverhill Boxboards, Inc., won by J. P. Bushell. Other winners were as follows: Best net, C. H. Ferguson, pitcher and goblets; 2nd net, John L. Munro, a leather zipper bag; best selected nine, using ½ handicap, C. F. Nickerson, silver pitcher; kicker's handicap, 1st, Art Shaw, cocktail set; 2nd, Al. Bond, silver platter. The drawing on the kicker's handicap was 76. Messrs. Shaw and Bond tied at 76, and Mr. Shaw won the toss-up. Guest prize, J. W. Jennings, pitcher; mystery prize to the one having the highest gross, Leonard French; Scotch foursome selected drive, best 68, Henry K. Lundgren and W. H. Hawks, golf balls; 2nd, W. F. Tibbetts and Earl Cummings, golf balls.

Louis Hill, chairman of the games committee, awarded the prizes to the following: Quoits, 1st, Louis Ingalls and Barnett, book-ends; 2nd, Bill Vincent and Joe Gallagher, glasses; bowling on the green, 1st, Fred Howell, desk lamp; 2nd, Luke Forte, cordial set; nail driving contest, 1st, Harold S. Fuller, water set; 2nd, Lester Friends, silver tray; bottle pins, 1st, Frank Lowthorp, water set; 2nd, Tony Lombard, cordial set.

Prizes for the winners of the tug o' war, ash trays, were obtained in the afternoon by a team captained by Fred Schneider, with Lester Friend as anchor, opposing a team captained by Sam Cohen, with I. Gindin as anchor.

The Supply Men defeated the Box Makers at baseball by a score of 24 to 22. Supply Men—Buell, Schneider, McDevitt, Mollenberg, Edmond, Emerson, J. Nathanson, Rozea and Ford. Box Makers—Fuller, G. Haigh, Nigrosh, L. Hill, A. Lombard, F. Lombard, Howell, Innes and Bickford. Seckendorf, score keeper; Gallagher, umpire.

The committees were as follows: Lester Friend, general chairman. Games—Louis Hill, chairman, Otto Schultz, Fred Schneider, Isadore Gindin and Grover Haigh. Golf—Paul Poinier and Harold Wilkins. Publicity—Ed Abrahams, chairman, Dick Piper, Sam Manaster and Herbert Bassett. Tickets—Frank Babcock, chairman, M. O. Hill, and Harry M. Cranmer. Club and Eats, John L. Munro.

The day's program closed by singing "Happy Days" and "Goodnight Buddies."

Seminole Paper Begins Health Advertising Campaign

NEW YORK, N. Y., June 18, 1934—On Sunday, June 17th, Seminole Paper Company, a division of the International Paper Company, had a striking full page advertisement in colors in "The American Weekly." This is the first advertisement in a campaign warning the public of the hidden dangers found in the half-wrapped rolls of toilet tissue.

Among the outstanding characteristics of Seminole Bathroom Tissue which the advertisements will feature will be that it is exceptionally soft, is fully sterilized, is extremely absorbent, and that every roll is individually and completely wrapped at the factory.

The advertising campaign is being closely coordinated with a national dealers' campaign in which large numbers are participating.

Hearing Called on Modification of Code for Paperboard Industry

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 20, 1934—W. W. Pickard, deputy administrator, will hold a public hearing June 29 in the Hall of Nations, Washington hotel, on the proposed modification of the code of fair competition for the paperboard industry, the National Recovery Administration announces. The proposed modification, submitted by the National Paperboard Association, claiming to represent 72 per cent of the industry, would amount to a general revision of the code.

Kalamazoo TAPPI Hears President Heritage

[FROM OUR REGULAR CORRESPONDENT]

The June meeting of the Kalamazoo Valley Section of TAPPI was held at the Kalamazoo Country Club, Kalamazoo, Mich., on Friday evening June 15. Dinner was held at 6:30 P.M. with chairman Carl Schneider presiding. There were about 70 present at the meeting.

At this meeting the members of the Kalamazoo Valley Section had the honor of meeting Clark C. Heritage, president of TAPPI, and also had the pleasure of listening to Mr. Heritage give a most interesting paper which bore the title of "Use Requirements of Printing Papers."

Following this paper considerable discussion was held in regard to the recent paper grading work which has been done. Of particular interest were the standards for brightness which have been established, and the machine for measuring this brightness.

Before giving his paper, Mr. Heritage gave a brief outline of the trip which is being planned for the TAPPI fall meeting on the Pacific Coast. The speaker also gave a short survey of the association in general, including its functions and methods of operation, the financial condition of the association, and the work of the various committees.

This was the last meeting of the section until September.

Among those present were: H. M. Annis, Allied Paper Mills, Kalamazoo, Mich.; P. G. Abbott, Watervliet Paper Company, Watervliet, Mich.; Raymond L. Barton, Michigan Paper Company, Plainwell, Mich.; H. C. Bradford, Rex Paper Company, Kalamazoo; J. E. Bauman, Kalamazoo Vegetable Parchment Company, Kalamazoo; Harry Barney, Allied Paper Mills; Willard Barnhart, American Box Board Company, Grand Rapids, Mich.; H. E. Brown, N. J. Zinc Company, New York, N. Y.; William Carroll, Allied Paper Mills; William Clements, Bryant Paper Company, Kalamazoo; E. N. Cowling, Hawthorne Paper Company, Kalamazoo; N. J. Cowie, same company; A. N. Cole, Rex Paper Company, Kalamazoo; Robert Crowell, Michigan Paper Company, Plainwell, Mich.; H. G. Doyer, Allied Paper Mills; Francis Denner, Kalamazoo Paper Company, Kalamazoo; P. F. Denner, same company; F. B. Eilers, Orr Felt and Blanket Company, Piqua, Ohio; A. Fischer, Allied Paper Mills; L. L. Griffiths, Heller & Merz Corporation, New York.; C. C. Heritage, Oxford Paper Company, Rumford, Maine; R. A. Hayward, Kalamazoo Vegetable Parchment Company, Kalamazoo; H. F. Heller, Paper Makers Chemical Corporation, Kalamazoo; P. R. Haggerson, same company; G. E. Hendrick, Bryant Paper Company; H. S. Faram, Watervliet Paper Company; Glenn Ingling, Kalamazoo Paper Company; W. K. Kidder, Bryant Paper Company; W. Kottman, Kalamazoo Vegetable Parchment Company; Jake Kuso, Rex Paper Company; E. E. Ludwig, Birmingham & Prosser; C. B. McAlister, Bryant Paper Company; E. G. Milham, Watervliet Paper Company; C. E. Mueller, Paper Makers Chemical Corporation; Henry Nendorf, Rex Paper Company, L. A. Parker, Michigan Paper Company; N. T. Robertson, Pulp Bleaching Corporation, Orange, N. J.; J. F. Shuman, American Cyanamid & Chemical Corporation, New York, N. Y.; C. C. Schneider, Hawthorne Paper Company; L. P. Simon, Birmingham & Prosser; Daniel Stacy, American Box Board Company, Grand Rapids, Mich.; Robert Melroy, Allied Paper Mills; E. J. Turner, Paper Makers Chemical Corporation; Harry Toole, Pagel, Horton & Co., New York, N. Y.; J. H. Weber, Allied Paper Mills; F. E. Wotalewicz, Kalamazoo Vegetable Parchment Company; E. F. Whittington, Commercial Testing Laboratories, Kalamazoo; Art Wollams, Allied Paper Mills; J. C. Widmeyer, same company; W. F. Hathaway, Kalamazoo Vegetable Parchment Company; Harold Volker, Allied Paper Mills; R. Valentine, Lee Paper Company, Vicksburg, Mich.

International Paper Co. Offers Scholarships

NEW YORK, N. Y., June 19, 1934—Two scholarships, each consisting of a four year course of study in the University of Maine at Orono, Maine, are being offered this year by International Paper Company. This announcement was made by E. A. Charlton, vice-president in charge of manufacturing, and Chairman of the General Council of the Industrial Council of International Paper Company, and accepted by the employee and management representatives of the General Council at its regular meeting held in New York City.

The scholarships are open to all sons and brothers of mill employees, or mill employees themselves, in the United States, and entry blanks have been sent to each plant. The four year course will be paid by the Company, and successful graduates will receive a Bachelor of Science degree in pulp and paper making. Numerous applications are expected from the various mills of the company.

Eastern Paper Salesmen Meet

There was an excellent attendance at the regular weekly luncheon and meeting of the Eastern Division of the Salesmen's Association of the Paper Industry, which was held in the South Room of the Hotel Commodore, New York, on Monday last.

Russell Smith gave an interesting demonstration of non-inflammable films, with his portable sound picture equipment. One picture portrayed incidents in the life of the famous musician, Johann Strauss, composer of the immortal "Blue Danube" waltz. Another two-reel photoplay shown was a humorous feature, "Sea Going Sheiks."

William F. Raymond, of the P. H. Glatfelter Company, president of the association, gave a report of his visit to the Middle-Western Division of the Association in Chicago last week, and a description of its successful golf outing. He praised the good-fellowship and intense enthusiasm of the members of that division.

Eastern Mfg. Co. Considering No Plan

Stuart B. Copeland, vice president and general manager of the Eastern Manufacturing Company, with general offices at Bangor, Me., writes as follows:

"As we have had several communications prompted by the article published on page 1 of the PAPER TRADE JOURNAL of Thursday, May 31, we wish to correct the impression given in that article to the effect that payment of interest on this company's bonds and bank loans was being deferred 'pending some form of reorganization, which is expected to get under way shortly.'

"There is at present no plan under consideration, but payment of the above interest has merely been deferred for the present in order to conserve working cash. Subsequent developments will depend entirely upon business conditions."

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JUNE 16, 1934

CIGARETTE PAPER

Standard Products Corp., Ile de France, Havre, 84 cs.; Standard Products Corp., Kosciuszko, Gdynia, 50 cs.; De Manduit Paper Corp., Manhattan, Havre, 139 cs.; Standard Products Corp., Manhattan, Havre, 4 cs.; Champagne Paper Corp., Waukegan, Havre, 520 cs.

WALL PAPER

W. H. S. Lloyd & Co., American Trader, London, 1 ble; R. F. Downing & Co., Uyo Maru, Kobe, 7 bls.; ———, Manhattan, Havre, 12 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., American Trader, London, 3 bls.

NEWSPRINT

Jay Madden Corp., Berlin, Bremen, 138 rolls; ———, Stavangerfjord, Oslo, 395 rolls; Lunham & Reeve, Inc., Scanstates, Kotka, 493 rolls; Jay Madden Corp., Scanstates, Kotka, 335 rolls; Gilman Paper Co., Hallaren, Norrkoping, 593 rolls; Brooklyn Times, Hallaren, Norrkoping, 273 rolls; Mercer Corp., Donnacona 1, Montreal, 582 rolls; American Jewish Publishing Co., Nuhaug, Three Rivers, 420 rolls; Walker Goulard Plehn Co., Manhattan, Hamburg, 108 bls.; ———, Manhattan, Hamburg, 132 rolls; Star Co., Marklaad, Liverpool, N. S., 611 rolls; N. Y. Tribune, Marklaad, Liverpool, N. S., 1701 rolls; World Telegram, Marklaad, Liverpool, N. S., 640 rolls; Bridgeport Herald Corp., Marklaad, Liverpool, N. S., 30 rolls; Perkins Goodwin & Co., Hamburg, Hamburg, 256 rolls.

WRAPPING PAPER

Wilkinson Grey & Co., Drottningholm, Gothenburg, 56 cs.; Scharff Bros., Black Heron, Rotterdam, 6 cs.; R. J. Saunders, Manhattan, Havre, 7 bls.; E. Dietzgen & Co., Hamburg, Hamburg, 9 cs.

FILTER PAPER

Oliver United Filters, American Trader, London, 1 cs.; H. Reeve Angel & Co., Inc., American Trader, London, 9 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., American Trader, London, 1 cs.; Devoe & Raynolds Co., American Trader, London, 2 cs.

TISSUE PAPER

Meadows Wye & Co., Georgic, Liverpool, 1 cs.

SURFACE COATED PAPER

Globe Shipping Co., Berlin, Bremen, 66 crates, 1 cs.

BASIC PAPER

F. C. Strype, Berlin, Bremen, 16 cs.; C. Bruning Co., Berlin, Bremen, 6 cs.

METAL COATED PAPER

Stone & Downer Co., Manhattan, Hamburg, 6 cs.; K. Pauli Co., Hamburg, Hamburg, 8 cs.

PHOTO PAPER

———, Berlin, Bremen, 2 cs.; American Express Co., Hamburg, Hamburg, 40 cs.

PARCHMENT PAPER

———, Berlin, Bremen, 14 cs.

DECALCOMANIAS

Sellers Transportation Co., Berlin, Bremen, 13 cs.; Sellers Transportation Co., Bremen, Bremen, 11 cs.; Penson & Co., Bremen, Bremen, 2 cs.

TRANSFER PAPER

Rohner Gehrig & Co., Bremen, Bremen, 12 cs.

SILK PAPER

Van Oppen & Co., Exeter, Marseilles, 11 cs.

PAPER BOARD

C. B. Hewitt & Bros., Inc., Hamburg, Hamburg, 29 bls.

PASTE BOARD

Coty Processing Co., Lafayette, Havre, 12 cs.

MISCELLANEOUS PAPER

The Borregaard Co., Inc., Drottningholm, Gothenburg, 48 rolls, 5 bls.; Wilkinson Grey & Co., Drottningholm, Gothenburg, 27 bls.; Kramer & Co., Drottningholm, Gothenburg, 137 bls.; Japan Paper Co., Drottningholm, Gothenburg, 6 cs.; A. Flinn & Co., Ile de France, Havre, 3 cs.; Japan Paper Co., Anna Maersk, Kobe, 4 cs.; Corn Exchange Bank Trust Co., Uyo Maru, Kobe, 10 cs.; C. Schleicher & Schull Co., Inc., Hamburg, Hamburg, 10 cs.; American Express Co., Hamburg, Hamburg, 10 cs.

RAGS, BAGGINGS, ETC.

A. W. Fenton, Inc., Transylvania, Glasgow, 16 bls. rags; ———, Transylvania, Glasgow, 61 bls. rags; Banco Coml. Italiane Trust Co., Black Heron, Rotterdam, 59 bls. burlaps; ———, Black Heron, Rotterdam, 100 bls. cotton waste; E. Butterworth & Co., Inc., City of Flint, Manchester, 32 bls. new cuttings; N. Schwab & Sons, City of Flint, Manchester, 33 bls. cotton waste; ———, City of Flint, Manchester, 240 bls. cotton waste; Castle & Overton, Inc., City of Flint, Dundee, 126 bls. paper stock; ———, City of Flint, Dundee, 36 bls. paper stock; E. J. Keller Co., Inc., Waukegan, ———, 34 bls. rags; Chase National Bank, Hamburg, Hamburg, 44 bls. rags.

BONE GLUE

———, Hamburg, Hamburg, 25 bags.

OLD ROPE

S. Birkenstein & Sons, Black Heron, Rotterdam, 96 coils; W. Steck & Co., City of Flint, Manchester, 80 coils.

CASEIN

D. C. Andrews & Co., Hamburg, Hamburg, 50 bags.

WOOD PULP

The Borregaard Co., Inc., Drottningholm, Gothenburg 300 bls. chemical pulp; D. M. Hicks, Inc., Drottningholm, Gothenburg, 6 bls. sulphite; Tradesmans Natl. Bank Trust Co., Drottningholm, Gothenburg, 500 bls. sulphate; Price & Pierce, Ltd., Drottningholm, Gothenburg, 125 bls. sulphite; Stora Kopparberg Corp., Minnequa, Skutskar, 500 bls. wood pulp; Pagel Horton & Co., Inc., Minnequa, Gefle, 250 bls. sulphite, 25 tons; Tradesmans Natl. Bank Trust Co., Minnequa, Norrsundet, 875 bls. sulphate; Brown Bros. Harriman & Co., Minnequa, Ornskoldsvik, 1530 bls. chemical pulp, 250 tons; Bulkley Dunton & Co., Minnequa, ———, 1625 bls. wood pulp, 325 tons; The Borregaard Co., Inc., Stavangerfjord, Sarpsborg, 504 bls. sulphate; E. M. Sergeant & Co., Stavangerfjord, Oslo, 150 bls. chemical pulp; Perkins Goodwin & Co., Scanstates, Gdynia, 100 bls. wood pulp, 15 tons; Parsons & Whittemore, Inc., Scanstates, Tallium, 3000 bls. wood pulp, 603 tons; Lagerloef Trading Co., Scanstates, Helsingfors, 127 bls. wood pulp, 25 tons; Lagerloef Trading Co., Scanstates, Helsingfors, 980 bls. sulphite, 157 tons; Castle & Overton, Inc., Scanstates, Kotka, 1719 bls. sulphite, 339 tons; Lagerloef Trading Co., Scanstates, Kotka, 1675 bls. sulphate, 335 tons; ———, Sekstant, New Sydney, N. S., 1073 bls. wood pulp; ———, Hallaren, Wiborg, 1675 bls. sulphite; ———, Hallaren, Norrkoping, 25 bls. sulphite; Bank of N. Y. Trust Co., Hamburg, Hamburg, 655 bls. wood pulp, 131 tons.

WOOD PULP BOARDS

Lagerloef Trading Co., Scanstates, Kotka, 64 bls., 105 rolls; Johaneson Wales & Sparre, Inc., Hallaren, Wiborg, 346 rolls.

BOSTON IMPORTS

WEEK ENDING JUNE 16, 1934

G. F. Malcolm Co., Georgic, Liverpool, 9 cs. tissue paper; Bulkley Dunton & Co., Westerwald, ———, 250 bls. wood pulp; Bulkley Dunton & Co., Minnequa, ———, 875 bls. wood pulp; Gottesman & Co., Inc., Roxen, Sweden, 1000 bls. wood pulp; Parsons & Whittemore, Inc., Westerwald, ———, 125 bls. wood pulp.

ALBANY IMPORTS

WEEK ENDING JUNE 16, 1934

Castle & Overton, Inc., Hallaren, Wiborg, 3449 bls. wood pulp.

PORTLAND IMPORTS

WEEK ENDING JUNE 16, 1934

Bulkley Dunton & Co., Minnequa, ———, 2000 bls. wood pulp; Bulkley Dunton & Co., Kersten Miles, ———, 4000 bls. wood pulp; Gottesman & Co., Inc., Roxen, Sweden, 7632 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING JUNE 16, 1934

Bulkley Dunton & Co., City of Havre, ———, 650 bls. wood pulp; Bulkley Dunton & Co., Dalhem, ———, 750 bls. wood pulp; Bulkley Dunton & Co., Carlsholm, ———, 2680 bls. wood pulp; Parsons & Whittemore, Inc., City of Hamburg, ———, 125 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING JUNE 16, 1934

Stora Kopparberg Corp., Minnequa, Skutskar, 1156 bls. wood pulp; Tradesmans Natl. Bank Trust Co., Minnequa, Norrsundet, 625 bls. sulphate, 134 tons; Keene & Arkus, City of Flint, London, 185 bls. rags; Lagerloef Trading Co., Scanstates, Helsingfors, 940 bls. sulphite, 156 tons; Lagerloef Trading Co., Scanstates, Kotka, 255 bls. sulphite, 51 tons; Castle & Overton, Inc., Scanstates, Kotka, 497 bls. sulphite, 98 tons; ———, Hallaren, Hallstavik, 801 rolls newsprint; ———, Hallaren, Norrkoping, 673 rolls newsprint; ———, Hallaren, Wiborg, 91 rolls newsprint; ———, Hallaren, Wiborg, 3838 bls. sulphite; ———, Hallaren, Wiborg, 3722 bls. sulphate; ———, Exermont, Algiers, 179 bls. rags.

CAMDEN IMPORTS

WEEK ENDING JUNE 16, 1934

Bulkley Dunton & Co., Dalhem, ———, 600 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING JUNE 16, 1934

Chase National Bank, Waukegan, Dunkirk, 175 bls. bagging.

NEWPORT NEWS IMPORTS

WEEK ENDING JUNE 16, 1934

Gottesman & Co., Inc., Carlsholm, Sweden, 1000 bls. wood pulp; M. Sone, City of Hamburg, Hamburg, 300 bls. wood pulp.

Combustion Engineering Co., Inc. and D. J. Murray Mfg. Co. Announce Their Association

Combustion Engineering Company, Inc., of New York, and D. J. Murray Manufacturing Company of Wausau, Wisconsin, announce that they have concluded an agreement for the joint development, manufacture and sale of the Improved Murray-Waern Chemical Recovery System. This system applies to the soda and sulphate pulp and paper manufacturing processes. Its particular advantage is that it provides, in conjunction with a well-established method of chemical reclamation, the necessary equipment for highly efficient heat recovery with correspondingly large production of high pressure steam. The entire system represents a thoroughly coordinated overall design with the operating advantages of low labor and maintenance cost and exceptional cleanliness.

The combination of the experience and the manufacturing facilities of these two organizations permits the design, manufacture and installation of complete Murray-Waern systems under a single contract and responsibility.

On Code Authority for Folding Boxes

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 20, 1934.—The National Recovery Administration has announced its approval of C. S. Rutherford, Fibreboard Products, Inc., San Francisco, Cal., as a member of the Code Authority for the folding paper box industry.

Mr. Rutherford recently was selected to fill the one vacancy left on the Code Authority for a representative of Pacific Coast manufacturers. He will serve for one year.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, June 20, 1934.

Conditions in the local paper market are considered quite satisfactory for the time of year. Demand for the various standard grades of paper is well up to average for the month of June and the outlook for the future is encouraging. Prices are generally holding to previously quoted levels, without difficulty.

The newsprint paper market continues to show improvement. According to information gathered by Media Records, the total advertising lineage in newspapers of fifty-two cities was 18.5 per cent larger in May than in the corresponding period last year. There was also a satisfactory increase over April.

Trading in the fine paper market is listless at present. Quotations are steady and unchanged. Tissues are moving in moderate volume. Kraft wrapping paper is in fairly satisfactory request. Manufacturing operations are being maintained at 50 per cent of capacity. The paper board market is practically marking time.

Mechanical Pulp

The ground wood pulp market is exhibiting a strong undertone. With production both in the United States, Canada, and abroad keyed to consumption the statistical position of the industry is sound, especially as there are no excessive accumulations. Prices are holding to schedule and reports of concessions are infrequent.

Chemical Pulp

Business in the chemical pulp market is fairly active. Demand for the various grades of domestic and imported chemical pulp is most along seasonal lines. Kraft pulp continues to exhibit strength. Bleached sulphite is steady and unchanged. Supplies of imported pulp are arriving in good volume. Prices are holding to schedule.

Old Rope and Bagging

While the old rope and bagging markets are slightly easier, announcement of the reduced compensatory tax on bag paper and the elimination of the tax on large paper bags is expected to work out more favorably for the rope paper interests and the bagging industry. No radical price changes have been reported of late.

Rags

The position of the domestic rag market is practically unchanged. Paper mill demand for new cotton rags is rather light at present, although No. 1 white shirt cuttings and fancy shirt cuttings continue in good export request. Roofing grades are beginning to move in better volume. Prices are steady, in most instances.

Waste Paper

Board mill demand for the lower grades of paper stock is only moderately active. Collections have been curtailed, however, with the result that the news grades are steadier. The higher grades of waste paper are holding up well, especially hard and soft white shavings and old white envelope cuttings. Book stock is rather dull.

Twine

Most of the business transacted in the local twine market during the past week was routine. Supplies are moving into consumption, however, in normal volume for the season. In most quarters livelier trading is anticipated with the approach of Fall. Despite the usual keen competition, prices are generally well sustained.

BOSTON PAPER MEN HOLD OUTING

(Continued from page 22)

E. R. Lyman, T. C. Greene, W. C. Graves, E. M. Hughes, F. Lercosser, R. B. Pising, E. Lindsey Cummings, Roger B. Taft, W. N. Stetson, Jr.; Donald S. Leslie, Fred B. Korbel, Maurice A. Park, E. L. Johnson, C. E. Rice, J. C. Campbell, H. B. Simmons, K. H. Ways, R. B. McDougall, Bob O'Neil, H. F. Bigelow, M. B. Holmes, E. W. Pierce, Wm. M. Marshall, C. W. Townsend, W. H. Linden, Harold Holden, Ketchunn Hume, F. Henry Serge, Walter F. Evans, Herbert Clark Fowler, James L. Harn, Herbert A. Lindenberg, F. H. Merrill, E. H. Sussenguth, Ralph L. Day, Chas. I. Foster, F. Herbolzheimer, W. W. Binford, V. R. Walden, Tom Walden, N. S. Clark, F. O. Johnson and T. Charles Casey.

Labor Allowance for Sales by Paper Trade

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 13, 1934—National Recovery Administrator Hugh S. Johnson has announced establishment of a scale of allowances for the actual wages of labor to be included in the selling price of merchandise in the paper distributing trade.

The allowances, which are to be based on the replacement cost of materials, follow:

FINE PAPER DIVISION	PERCENTAGE FOR LABOR COST
Warehouse sales	12 per cent
Indirect sales	3 per cent
Direct sales	2 per cent
WRAPPING PAPER DIVISION	
Warehouse sales	9 per cent
Indirect sales	2 per cent
Direct sales	1 per cent

These allowances are effective until December 31, 1934, subject to further order by the Administrator.

Chandler Paper and Pulp Mill Sold

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., June 11, 1934—The pulp and paper mill at Chandler, Que., formerly owned by the St. Lawrence Pulp and Paper Corporation and the Bonaventure Pulp and Paper Company, has been sold to interests represented by Paul Gauthier, Montreal lawyer, for $90,000. Its original cost was $1,500,000, but it has been closed down for the past two years. There is a report that the mill will be used for the production of sulphite pulp for the making of artificial silk.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, June 20, 1934.

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Prices are holding to schedule. The pulp is quoted at from $42.50 to $45 per ton, in bulk; while the powder is selling at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—No radical changes transpired in the bleaching powder market during the past week. The contract movement is about normal for the season. Bleaching powder is still quoted at from $1.90 to $2.15 per 100 pounds, in drums, at works.

CASEIN.—The casein market is stronger. Domestic standard ground is quoted at 12½ cents and fine ground at 13 cents per pound. Argentine standard ground is selling at 13½ cents and finely ground at 14 cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Demand for caustic soda is fairly persistent. Contract shipments are moving regularly. Solid caustic soda is still quoted at from $2.60 to $3.10; while the flake and ground are selling at from $3 to $3.05 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is exhibiting a strong undertone. Prices are holding to schedule. Imported china clay is quoted at from $13.50 to $21 per ton, ship side; while domestic paper making clay is selling at from $5 to $12 per ton, at works.

CHLORINE.—Some improvement was noticed in the chlorine market. Shipments against contract are moving freely. Prices are steady. Chlorine is quoted at from $2 to $2.25 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market is softer. The grades of gum rosin used in the paper mills are now quoted at from $5.65 to $5.75 per 280 pounds, in barrels, at works; while wood rosin is selling at $4.60 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Steadiness prevails in the salt cake market. Prices remain unchanged. Salt cake is quoted at from $12 to $14 and chrome salt cake at from $12 to $12.50 per ton, at works. Imported salt cake is selling at from $12 to $12.50 per ton, on dock.

SODA ASH.—The soda ash market is firm, although paper mill demand is rather restricted at present. The contract movement is seasonal. Quotations on soda ash, in car lots, at works, are as follows: in bulk, $1.10; in bags, $1.40; and in barrels, $1.50.

STARCH.—The starch market is inclined to fluctuate, due to uncertainty in the basic product situation. Prices have recovered from the recent decline. Special paper making starch is quoted at $3.01 per 100 pounds, in bags; and at $3.28 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Conditions in the sulphate of alumina market are fairly satisfactory. Prices remain unchanged. Commercial grades are quoted at from $1.35 to $1.50; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market continues steady. Sulphur is quoted at $18 per long ton on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—Business in the talc market is moderately active. The contract movement is average. Prices are steady. Domestic talc is still quoted at from $16 to $18 per ton, in bulk, at eastern mines; while imported talc is selling at from $23 to $30 per ton, on dock.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	6.50	@	—
Bonds	6.00	@	—
Index	6.00	@	—
Writings—			
Extra Superfine	6.50	@	—
Superfine	6.25	@	—
Tub sized	5.75	@	—
Engine sized	5.50	@	—
Book, Cased—			
S. & S. C.	5.35	@	5.75
S. & S. C. Litho	5.60	@	6.00
M. F.	5.10	@	5.50
Coated and Enamel	5.90	@	6.55
Coated Litho	5.90	@	6.55
Tissues—Per Ream—			
White No. 1	.82½	@	.85
White No. 2	.67½	@	—
Anti-Tarnish M. G. only	1.00	@	—
Colored	.85	@	—
Kraft	.70	@	—
Manila	.67½	@	.70
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Butchers	4.00	@	4.50
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75
Common Bogus	1.50	@	3.00
Screenings	2.50	@	3.50
Glassine—			
Bleached	.11	@	—
Unbleached	.09	@	—

(The following Quotations are Delivered New York)

News, per ton—			
Roll, contract	40.00	@	—
Rolls, spot	40.00	@	—
Sheets	45.00	@	—
Kraft—			
No. 1 Domestic	4.75	@	5.00
No. 2 Domestic	3.87½	@	—
Southern	3.87½	@	—
Boards—per ton—			
News	45.00	@	50.00
Chip	42.50	@	47.50
Sgl. Mla. Lt. Chip	52.50	@	55.00
Jute Lined Chip	52.50	@	55.00
White Patent Coated	65.00	@	70.00
Binders Boards	68.00	@	72.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	27.00	@	29.00
Dry	27.00	@	30.00
(F.o.b. Mill)			
No. 1 Domestic and Canadian	24.00	@	29.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Division 1	2.85	@	—*
Division 2	2.80	@	—*
Division 3	2.75	@	—*
Prime Qualities—			
Class 1. All Prime Easy Bleaching	2.25	@	—*
Other Than Easy Bleaching—			
Class 2. Higher Than Standard	2.20	@	—*
Class 3. Standard	2.15	@	—*
Class 4. Lower than Standard	2.10	@	—
(On Dock, Atlantic Ports)			
Kraft No. 1	1.85	@	1.90
Kraft No. 2	1.60	@	1.70
(F.o.b. Pulp Mill)			
Kraft Domestic	1.60	@	2.75
(Delivered)			
Soda Bleached	2.50	@	—

*Add 60 Cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	6.50	@	7.00
Silesias No. 1	4.25	@	4.50
New Unbleached	6.75	@	7.25
New Soft Blacks	3.00	@	3.25
Blue Overall	4.00	@	4.25
Fancy	2.50	@	2.75
Washables	1.75	@	2.00
Mixed Khaki Cuttings	3.00	@	3.25
O. D. Khaki Cuttings	3.75	@	4.00
Men's Corduroy	1.50	@	1.75
New Mixed Blacks	2.50	@	2.75

Old Rags

White, No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.75	@	3.25
White, No. 2—			
Repacked	1.75	@	2.25
Miscellaneous	1.50	@	1.75
Thirds and Blues—			
Repacked	1.50	@	1.75
Miscellaneous	1.25	@	1.50
Black Stockings	2.50	@	3.00
Roofing Rags—			
No. 1	1.10	@	1.25
No. 2	.80	@	.85
No. 3	.70	@	.75
No. 4	.65	@	.70
No. 5A	.60	@	.65

Foreign Rags

New Rags

New Dark Cuttings	1.60	@	1.70
New Mixed Cuttings	1.75	@	1.85
New Light Silesias	3.75	@	4.00
Light Flannelettes	3.75	@	4.00
Unbleached Cuttings	6.50	@	6.75
New White Cuttings	6.50	@	6.75
New Light Oxfords	3.25	@	3.50
New Light Prints	2.75	@	3.00

Old Rags

No. 1 White Linens	7.50	@	8.00
No. 2 White Linens	6.50	@	7.00
No. 3 White Linens	4.50	@	5.00
No. 4 White Linens	2.25	@	2.50
No. 1 White Cotton	4.25	@	4.75
No. 2 White Cotton	3.25	@	3.75
No. 3 White Cotton	2.50	@	2.75
No. 4 White Cotton	1.90	@	2.15
Extra Light Prints	2.00	@	2.25
Ord. Light Prints	1.75	@	1.85
Med. Light Prints	1.55	@	1.65
Dutch Blue Cottons	1.75	@	1.85
French Blue Linens	2.30	@	2.40
German Blue Linens	2.15	@	2.25
German Blue Cottons	1.70	@	1.80
Checks and Blues	1.30	@	1.40
Linsey Garments	1.40	@	1.60
Dark Cottons	1.00	@	1.10
Old Shopperies	.95	@	1.00
New Shopperies	.90	@	1.00
French Blues	1.70	@	1.80

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	1.50	@	1.60
Domestic	1.40	@	1.50
Wool Tares, light	1.20	@	1.30
Wool Tares, heavy	1.20	@	1.30
Bright Bagging	1.15	@	1.25
Manila Rope			
Foreign	2.35	@	2.45
Domestic	2.25	@	2.50
Small Mixed Rope	1.10	@	1.50
New Burlap Cut	2.00	@	2.25
Hessian Jute Threads—			
Foreign	2.60	@	2.75
Domestic	2.80	@	3.00

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.70	@	2.80
Ordinary Hard White No. 1	2.15	@	2.25
Hard White No. 2	1.95	@	2.05
Soft White No. 1	1.85	@	1.95
Flat Stock—			
Stitchless	.80	@	.90
Over issue Mag.	.80	@	.90
Solid Flat Book	.65	@	.75
Crumpled No. 1	.60	@	.65
Solid Book Ledger	1.50	@	1.60
Ledger Stock	1.00	@	1.10
New B. B. Chips	.30	@	.35
Manilas—			
New Env. Cut	1.70	@	1.80
New Cuttings	1.35	@	1.45
Print	Nominal		
Bogus Wrapper	.40	@	.50
Container	Nominal		
Old Kraft Machine—			
Compressed bales	1.10	@	1.20
News—			
No. 1 White News	1.00	@	1.10
Strictly Overissue	.65	@	.70
Strictly Folded	.35	@	.45
No. 1 Mixed Paper	.20	@	.25

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Twines

(F. o. b. Mill)

Cotton—			
B. C. 18 basis	.30	@	.32
No. 1	.20	@	.22
No. 2	.19	@	.20
No. 3	.17	@	.18
A. Italian, 18 basis	.36	@	.37
Finished Jute—			
Dark, 18 basis	.18	@	.20
Light, 18 basis	.20	@	.22
Jute Wrapping, 3-6 Ply—			
No. 1	.15½	@	.16½
No. 2	.15	@	.16
Tube Rope—			
4-ply and larger	.09¼	@	.09¾
Fine Tube Rope—			
4-ply	.11¼	@	.11¾
3-ply	.14¼	@	.14¾
2-ply	.14¼	@	.14¾
Paper Makers Twine	.08¼	@	.13¼
Box Twine, 3-3 ply	.14¼	@	.14¾
White Hemp	.13¼	@	.16¼
Java Sisal—			
No. 1 Basis	.11½	@	—
No. 2 Basis	.10½	@	—
New Zealand Sisal	.11½	@	—
Sisal Lath Yarn—			
No. 1	.13½	@	.15½
No. 2	.11½	@	.13½
Manila Twine	.24½	@	.29½

CHICAGO

Paper

(F. o. b. Mill)

Rag Bond	.12	@	.50
Water Marked Sulphite Bond	.06¾	@	.11
Sulphite Bond	.05½	@	.11
Superfine Writing	.10	@	.20
No. 1 M. F. Book	.06½	@	.07¾
No. 2 M. F. Book	.05¼	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06¾
Coated Book	.07	@	.12
Coated Label	.07	@	.08½
No. 1 Manila	.04¾	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	4.75	@	5.00
Southern Kraft	3.88	@	4.25
No. 2 Kraft	3.88	@	4.25
Wood Tag Boards	.04¼	@	.07¾
Sulphite Screenings	.03	@	.03¾
Manila Tissue	.05¾	@	.07
White Tissue	.07	@	.09

(Delivered Central Territory)

News, per ton—			
Rolls, contract	41.00	@	—
Sheets, open	46.00	@	51.00
Boards, per ton—			
Plain Chip	46.50	@	—
Solid News	50.00	@	—
Manila Lined Chip	55.00	@	—
Patent coated	65.00	@	—
Container Lined—			
85 Test, per 1000 sq. ft.			1.70
100 Test, per 1000 sq. ft.			1.85

Old Papers

(F. o. b. Chicago)

Shavings			
No. 1 White Envelope cuttings	1.70	@	2.00
No. 1 Hard White	1.40	@	1.65
No. 1 Soft White	1.25	@	1.50
Ledger & Writings	.70	@	.80
Solid Books	.60	@	.70
Blanks	1.00	@	1.05
Krafts	.80	@	.90
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	.90	@	1.00
Print Manila	.50	@	.55
Overissue News	.60	@	.70
Old Newspapers—			
No. 1	.50	@	.55
Mixed Papers—			
No. 1	.30	@	.35
Rooning Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

(Delivered Philadelphia)

Bonds	.05-9/10	@	.38
Ledgers	.06 9/10	@	.40
Writings—			
Superfine	.10	@	.18
Extra Fine	.15	@	.24
Fine	.15	@	.21
No. 2	.10	@	.15
Fine No. 3	.05	@	.06
Book, M. F.	.05¼	@	.06¼
Book, S. S. & C.	.05	@	.07½
Book, Coated	.06½	@	.09
Coated Lithograph	.06¾	@	.08½
Offset	.07	@	.11
No. 1 Jute Manila	6.25	@	—
Manila Sul., No. 1	5.25	@	—
Manila No. 2	3.00	@	—
No. 1 Kraft	5.00	@	—
Southern Kraft	4.75	@	—
Common Bogus	.03	@	.04½
News Print Rolls	46.00	@	55.00
Straw Board	40.00	@	45.00
News Board	50.00	@	—
Chip Board	45.00	@	—
Wood Pulp Board	70.00	@	85.00
Binder Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	03½	@	.04
New White, No. 2	02½	@	.04
Light Silesias	02½	@	.03
Silesias, No. 1	03	@	.03½
Black Silesias, soft	02½	@	.03
New Unbleached	.05	@	.05½
Washable, No. 1	.01½	@	.02
Blue Overall	.03½	@	.04
Cottons—According to grades—			
Washable, No. 2	.02½	@	.03
New Blue	.01½	@	.03
Fancy	.01½	@	.03
New Black Soft	.03	@	.04
New Light Seconds	.01½	@	.02
New Dark Seconds	1.50	@	1.75
Khaki Cuttings—			
No. 1 O.D.	.03	@	.04
No. 2 Mixed	.03	@	.04
Corduroy	.02	@	.03
New Canvas	.03½	@	.04½
New Black Mixed	.02½	@	.03½

Domestic Rags (Old)

White No. 1—			
Repacked	2.50	@	3.50
Miscellaneous	1.75	@	2.25
M. G.	3.00	@	3.75
Thirds and Blues—			
Miscellaneous	1.00	@	1.50
Repacked	1.50	@	2.00
Black Stockings (Export)	2.00	@	3.50
Roofing Stock—			
Foreign No. 1	.50	@	.75
Repacked	.70	@	.85

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.25	@	1.50
Domestic	1.50	@	1.75
Manila Rope	2.00	@	2.25
Sisal Rope	1.25	@	1.50
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	1.25	@	1.50
No. 2	.80	@	1.00
Wool Tares, heavy	2.75	@	—
Mixed Strings	1.15	@	1.25
No. 1 New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.00	@	2.25

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.25	@	2.30
No. 2 Hard White	1.90	@	2.00
No. 1 Soft White	1.80	@	1.85
No. 2 Soft White	1.25	@	1.50
No. 1 Mixed	—	@	.75
No. 2 Mixed	—	@	.50
Solid Ledger Stock	1.50	@	1.60
Writing Paper	1.10	@	1.20
No. 1 Books, heavy	—	@	.70
No. 2 Books, light	—	@	.50
No. 1 New Manila	—	@	1.40
No. 1 Old Manila	—	@	.70
Print Manila	—	@	.60
Container Manila	—	@	.50
Old Kraft	1.00	@	1.10
Common Paper	—	@	.20
No. 1 Mixed Paper	—	@	.25
Straw Board Chip	—	@	.30
Binders Board Chip	—	@	.30
Corrugated Board	—	@	.50
Overissue News	—	@	.50
Old Newspapers	—	@	.30

BOSTON

Paper

(F. o. b. Mill)

Ledgers—			
Sulphite	.06	@	.12½
Rag Content	.12	@	.30
All Rag	.36	@	.52½
Bonds—			
Sulphite	.05½	@	.11
Rag Content	.12	@	.30
All Rag	.36	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¼	@	.06¾
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04¼	@	.05
No. 2 Kraft	.03½	@	.04¼
(F. o. b. Boston)			
Southern Kraft	.03½	@	.04¼

(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)

Common Bogus	.02	@	.02¼
(Delivered New England points)			
News Print, rolls	44.50	@	—
Straw Board, rolls	.009	—	@35.00
Straw Board in Sheets, basis 35s to 70s	—	@	40.00
Filled News Board	45.00	@	50.00
Chip Board	42.50	@	47.00
Chip Board (Creasing)	45.00	@	—
Single Manila Lined Chip	52.50	@	62.50
Single White, Patent Coated News Board—Bender	62.50	@	72.50
Wood Pulp Board	70.00	@	75.00
Binder Boards	62.00	@	75.00

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	$2.20	@	2.35
No. 1 Soft White	1.75	@	2.00
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.75	@	—
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.95	@	1.05
No. 1 Books, heavy	.85	@	.95
No. 1 Books, light	.65	@	.75
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.25	@	1.30
No. 1 Old Manila	.75	@	.80
White Blank News	.95	@	1.05
No. 1 Kraft	1.00	@	1.10
Manila	.70	@	.75
No. 1 Mixed Papers	.15	@	.20
Print Manila	.40	@	.45
Overissue News	.45	@	.50
Old Newspapers	.35	@	.40
Box Board Chips	.32½	@	.35
Corrugated Boxes	.30	@	.32½
Screening Wrappers	.50	@	.60

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	2.00	@	2.12½
Domestic	2.25	@	2.37½
Transmission Rope	—	@	1.25
Mixed Strings	—	@	.40
Jute Rope	1.50	@	1.60
Jute Carpet Threads	.65	@	.70
Gunny No. 1—			
Foreign	1.40	@	1.45
Domestic	1.12½	@	1.17½
Bleachery Burlap	3.00	@	3.25
Scrap Burlap	1.10	@	1.15
Scrap Sisal	.90	@	1.10
Scrap Sisal for shredding	1.00	@	1.25
Wool Tares, heavy	1.25	@	1.30
New Burlap Cuttings	1.25	@	1.50
Australian Wool Pouches	2.25	@	2.50
Heavy Baling Bagging	1.40	@	1.50
Paper Mill Bagging	.90	@	1.10
Bagging No. 2	.50	@	.55

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.02	@	.02¼
New White No. 1	.06½	@	—
New White No. 2	.04½	@	.05
Silesias No. 1	.04	@	—
New Black Silesias	.02½	@	.03
New Unbleached	.07	@	.07¼
Blue Cheviot	—	@	4.65
Fancy	—	@	.02½
Washable	.02¼	@	—
Cottons—According to grades—			
Blue Overalls	—	@	.03¼
New Black, soft	.04	@	.04
Khaki Cuttings	.03	@	.03¼
O. D. Khaki	.02¾	@	.03
Corduroy	.01¼	@	.02
New Canvas	—	@	.05
B.V.D. Cuttings	—	@	.06¼

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	
White No. 1—			
Repacked	—	@	3.00
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	2.00	@	2.75
Miscellaneous	2.00	@	2.25
Twos and Blues	1.25	@	1.50
Thirds and Blues			
Repacked	2.00	@	2.75
Miscellaneous	2.00	@	2.25
Black Stockings	2.25	@	2.50
Roofing Stock			
No. 1	.90	@	.95
No. 2	.70	@	.75
No. 3	.60	@	.65

Foreign Rags

(F. o. b. Boston)

Dark Cottons	.85	@	.95
New White Shirt Cuttings	5.50	@	6.00
Dutch Blues	2.00	@	2.50
New Checks & Blues	2.50	@	3.00
Old Fustians	1.55	@	1.60
Old Linsey Garments	1.25	@	1.35

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.10¼	@	—
No. 2 Sulphite	.08½	@	—
No. 1 Colored	.10¼	@	—
No. 2 Colored	.09	@	.10
Ledgers (sulphite)			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F. (Carloads)	6.20	@	—
No. 3 M. F. (Carloads)	5.70	@	—
No. 4 M. F. (carloads)	4.75	@	—
No. 1 S. C. (carloads)	6.65	@	—
No. 3 S. C. (carloads)	6.20	@	—
No. 4 S. C. (carloads)	5.20	@	—
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	14.00	@	—
Wrapping—			
Rag Brown	4.25	@	—
White Wrap	2.22½	@	—
"B" Manila	4.75	@	—
No. 1 Manila	5.25	@	—
Fiber	5.25	@	—
Kraft, M. F.	5.75	@	—
Kraft No. 2	5.25	@	—

(F.O.B. Cars Toronto)

News, per ton—			
Rolls (contract)	45.50	@	—
Sheets	50.50	@	—

Pulp

(F. o. b. Mill)

Ground Wood	18.00	@	20.00
Sulphite easy bleaching	40.00	@	—
Sulphite, news grade	38.00	@	—
Sulphite, bleached	50.00	@	55.00
Sulphate	50.00	@	

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.00	@	2.30
Soft White	1.60	@	1.90
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	1.00
Light and Crumpled Book Stock	.80	@	.90
Ledgers and Writings	1.00	@	1.05
Manila—			
New Manila Cut	1.25	@	1.30
Printed Manilas	.70	@	.60
Kraft	1.25	@	1.30
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.60	@	—
No. 1 Mixed Paper	.50	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.06	@	.06¼
Fancy Shirt Cuttings	.02¼	@	.02½

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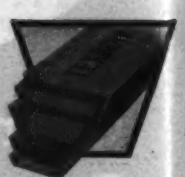

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